

# Technical Guide

Plasma  
(GPH11DU Chassis)  
HD Models

## Troubleshooting Handbook

**Model :**

- TH-42PZ80U**
- TH-46PZ80U**
- TH-50PZ80U**
- TH-42PZ85U**
- TH-46PZ85U**
- TH-50PZ85U**
- TH-42PZ800U**
- TH-46PZ800U**
- TH-50PZ800U**
- TH-46PZ850U**
- TH-50PZ850U**



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## <Introduction>

### **1. Basic concept of how to determine the defective board**

#### **1) Verification of voltages**

Normally, when there is a power problem, shutdown occurs immediately.

So, to resolve a power problem, voltage checks are necessary before shutdown.

#### **2) Check if the power comes up after disconnecting the board under suspicion.**

If power comes up (\*) after disconnecting a board, the board is defective.

(\*) "Power comes up" equals "no shutdown".

### **2. Troubleshooting Video and Audio problems**

### **3. Examples of video problems**

### **4. Adjustment after PCB exchange**

#### **1) After exchanging the following boards, voltage adjustment is required.**

P board, SC board, SS board => Please refer to the "Service Manual".

# Connector's Location (TH-42PZ85U)

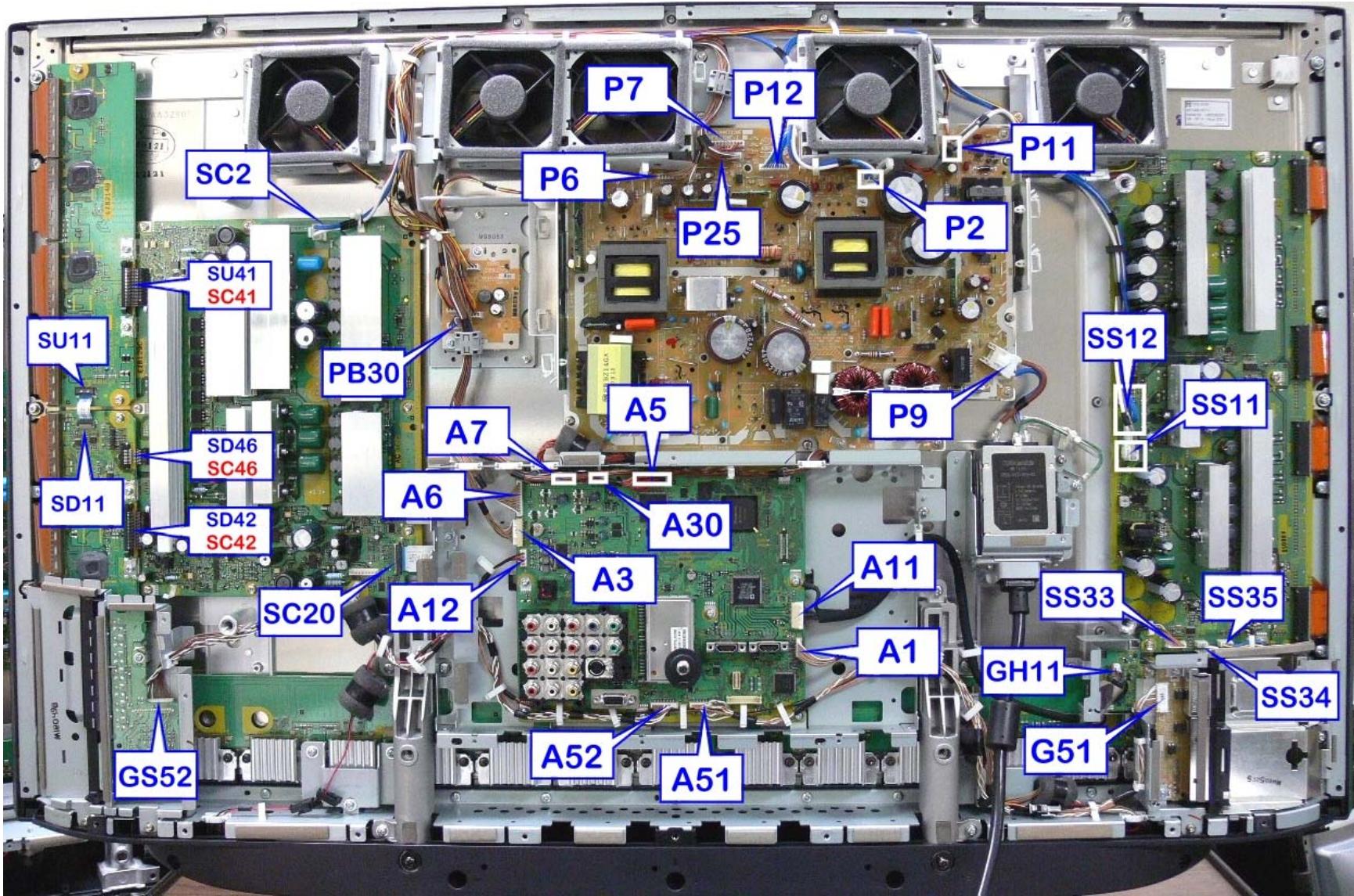


Figure 1

# 1. Troubleshooting Shutdown Problems

**CAUTION:** Some steps requires removal of connectors and sometimes PC boards removal. Do not let the TV run for more than 30 seconds while connectors or boards are disconnected.

# Power LED's Response to Shutdown Operation

## <LED Blinking timing>

Number of blinks	Contents	Check point
1	Communication Error with Microcomputer	D, A
2	15V SOS	D
3	3.3V SOS	D
4	Power Supply SOS	P
5	5V SOS	D
6	SC Energy recovery SOS	SC, D, P
7	SC floating voltage SOS	SC, SU, SD, D, P
8	SS Energy recovery SOS	SS, D, P
9	Panel Configuration SOS	D
10	Sub 5V SOS, Main 3.3V SOS, DTV9V SOS, Tuner SOS	A
11	Fan SOS	PB, A
12	Sound SOS	A
13	Communication Error with Peaks Lite-2	A

# LED blinks 1 time

Trouble Mode	Defective Board
Communication Error	D, GS, A

**Warning:** Disconnect AC Power prior to making any disconnection or connection

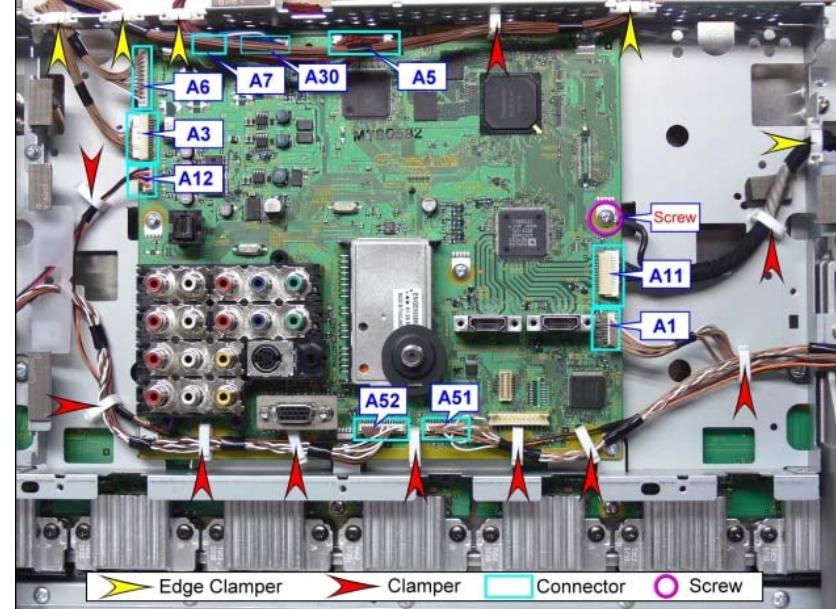
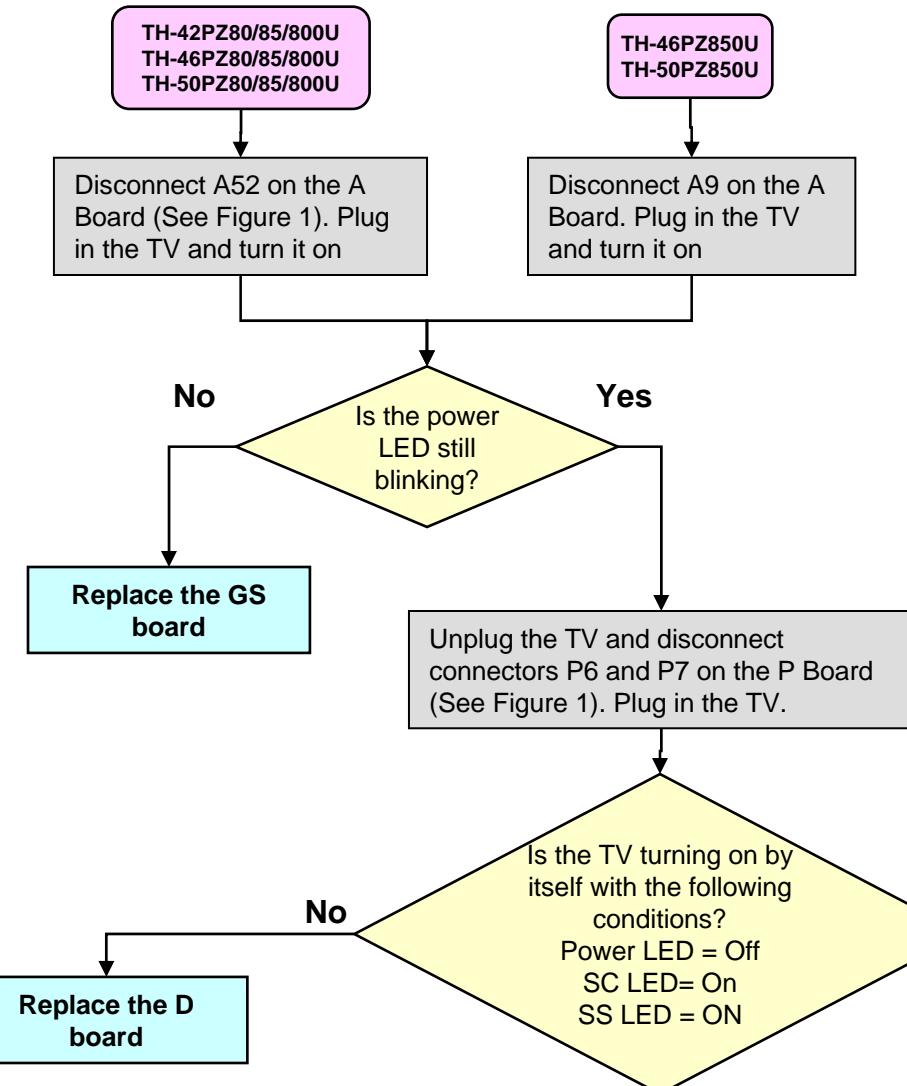


Figure 2

# LED blinks 2 times

Trouble Mode	Defective Board (Possibility)	<u>2 Blinks Condition can be caused by:</u>
15V down SOS	P, A, SC, SS Board (P > A, SC, SS)	<ul style="list-style-type: none"> <li>Missing P15V</li> <li>A short of the P15V</li> <li>Wrong diagnostic by the D board</li> </ul>

P15V Distribution

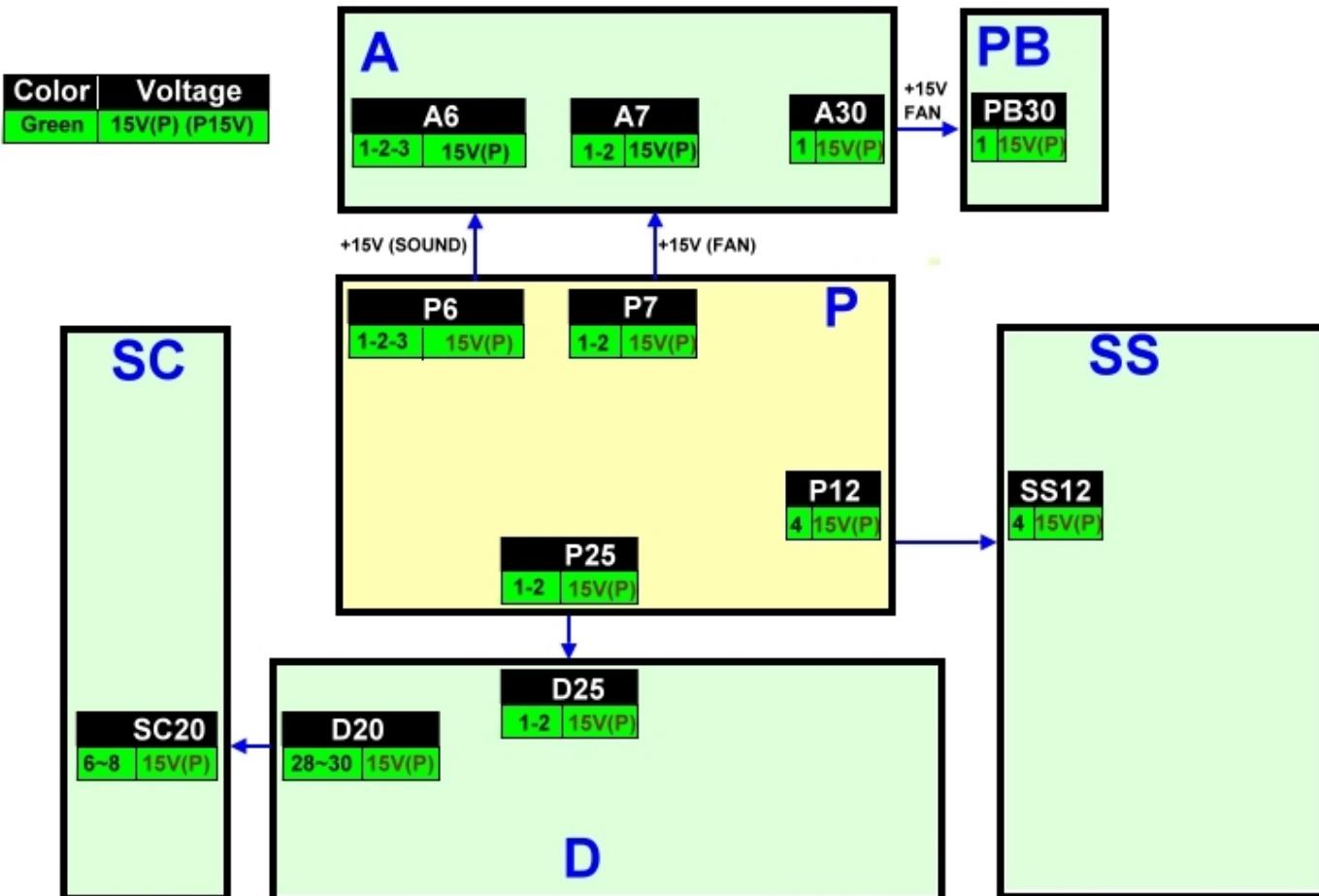
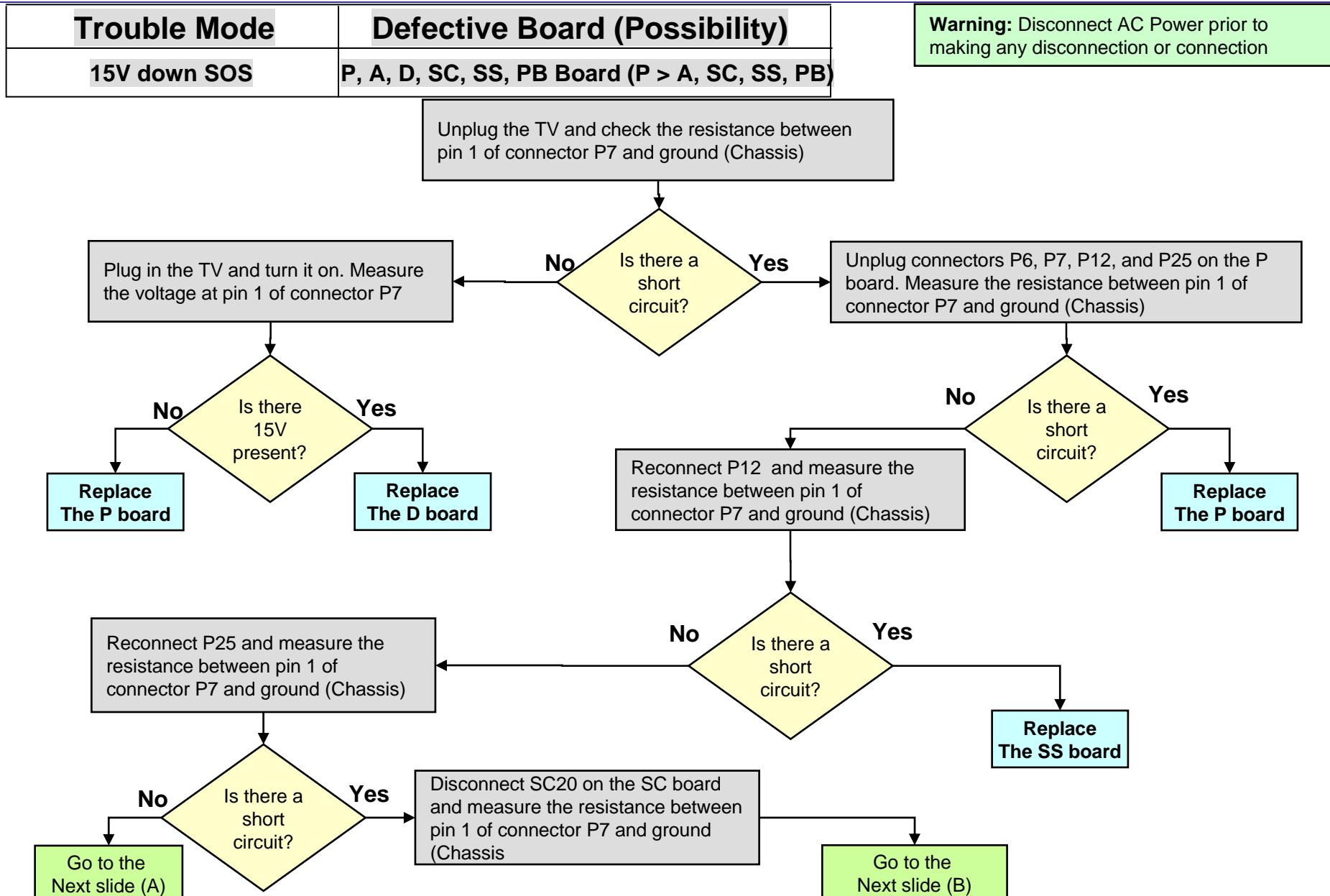
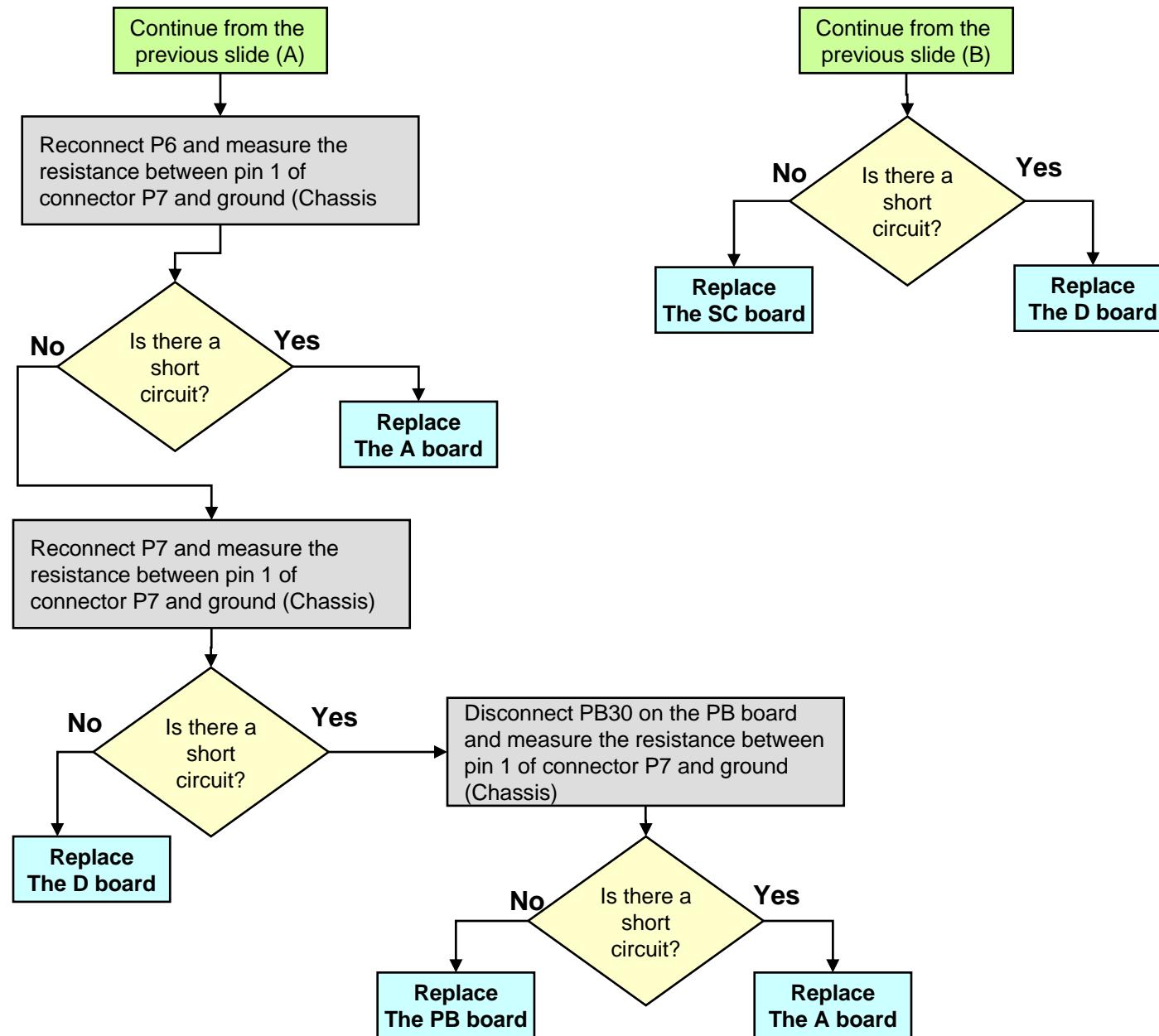


Figure 3

# LED blinks 2 times





# LED blinks 3 times

Trouble Mode	Defective Board
3.3V down SOS	D Board

**Warning:** Disconnect AC Power prior to making any disconnection or connection

Replace the D board

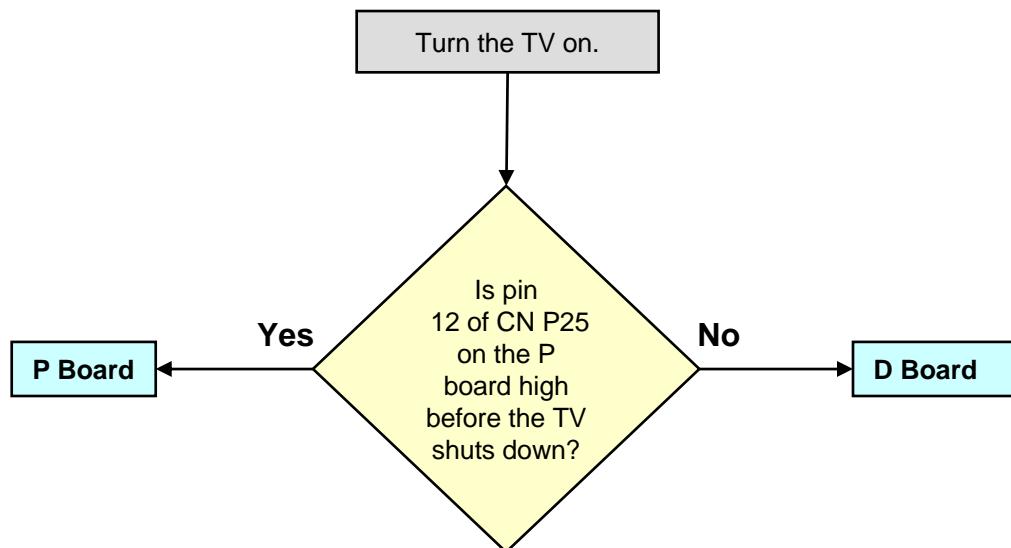
# LED blinks 4 times

Trouble Mode	Defective Board
Power Supply SOS	Primarily P board followed by D board

**Warning:** Disconnect AC Power prior to making any disconnection or connection

## 4 blinks condition can be caused by:

An abnormal increase in any of the voltages generated by the power supply (Vsus, Vda, P15V, P5V, STB5V)



# LED blinks 5 times

Trouble Mode	Defective Board
5V SOS	P, D, Cs, SC, SD, SS, D board or Panel

**Warning:** Disconnect AC Power prior to making any disconnection or connection

## 5 blinks condition can be caused by:

- Missing P5V
- A short of the P5V
- A short of the Vda line (Note: missing Vda from the P board does not cause 5 blinks)
- Wrong diagnostic by the D board

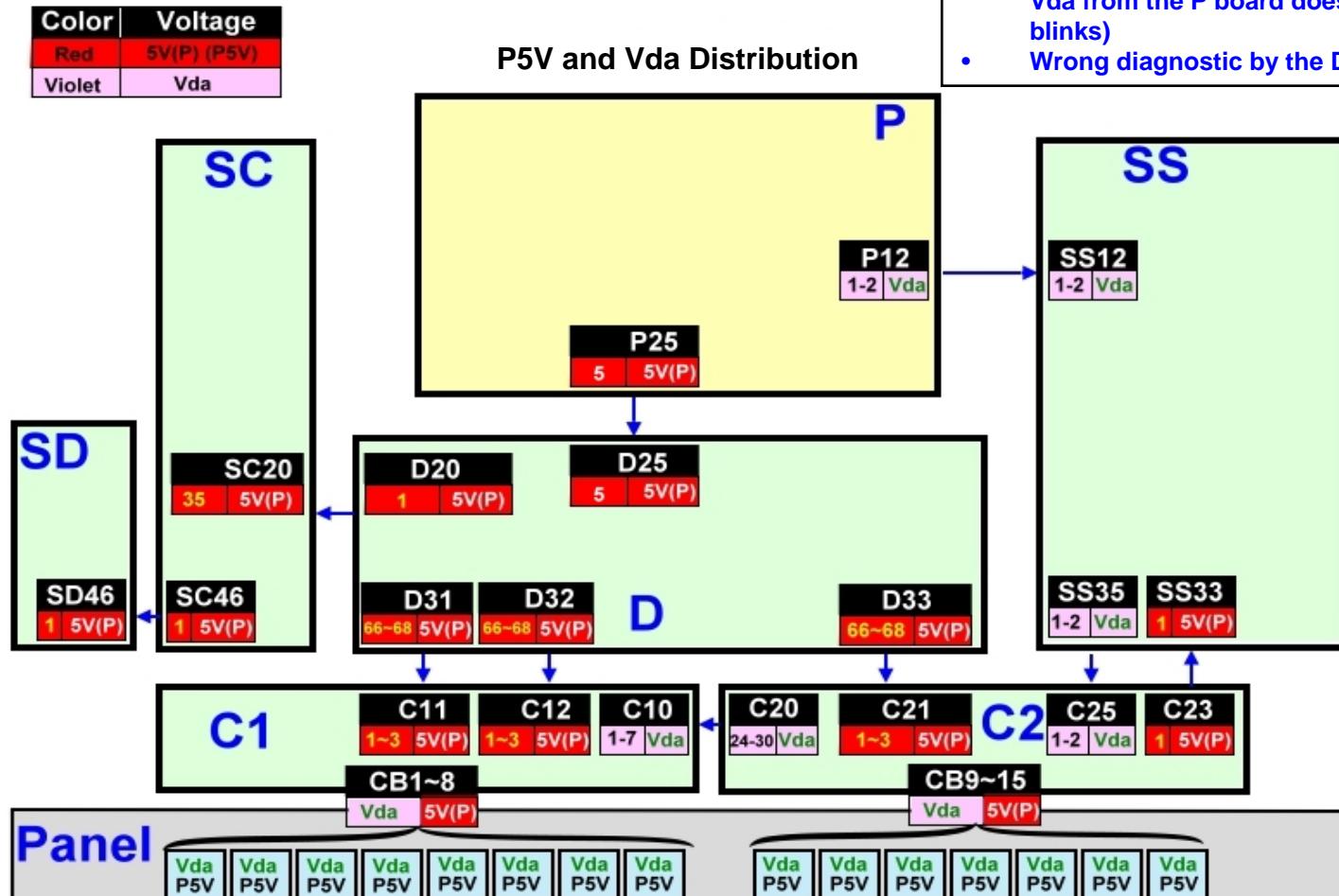
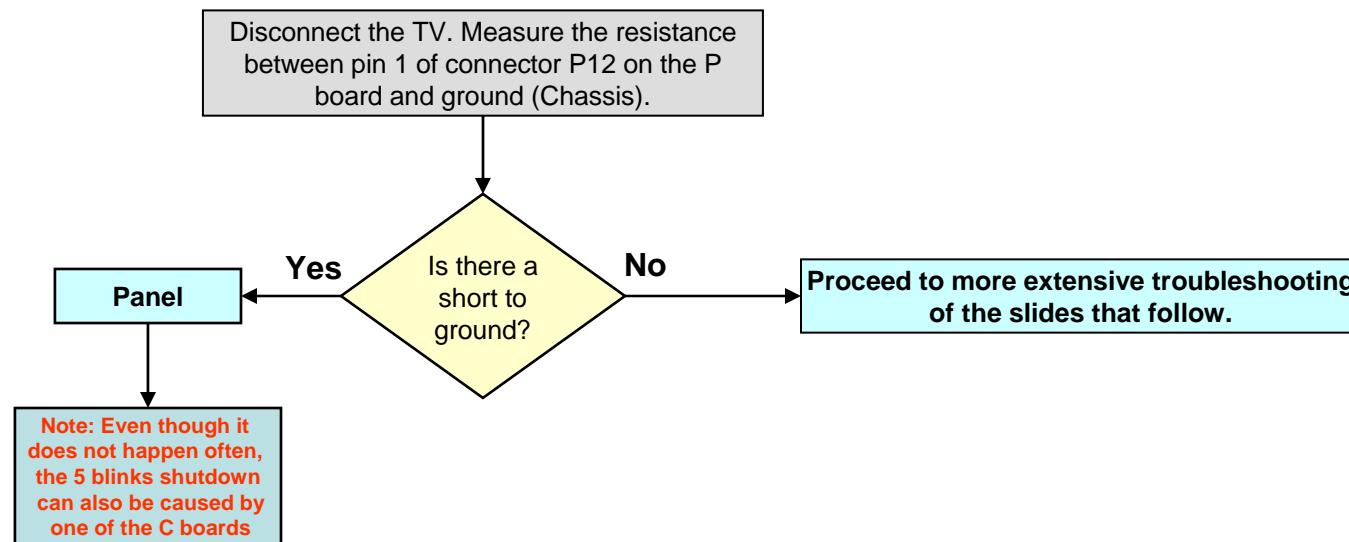


Figure 4

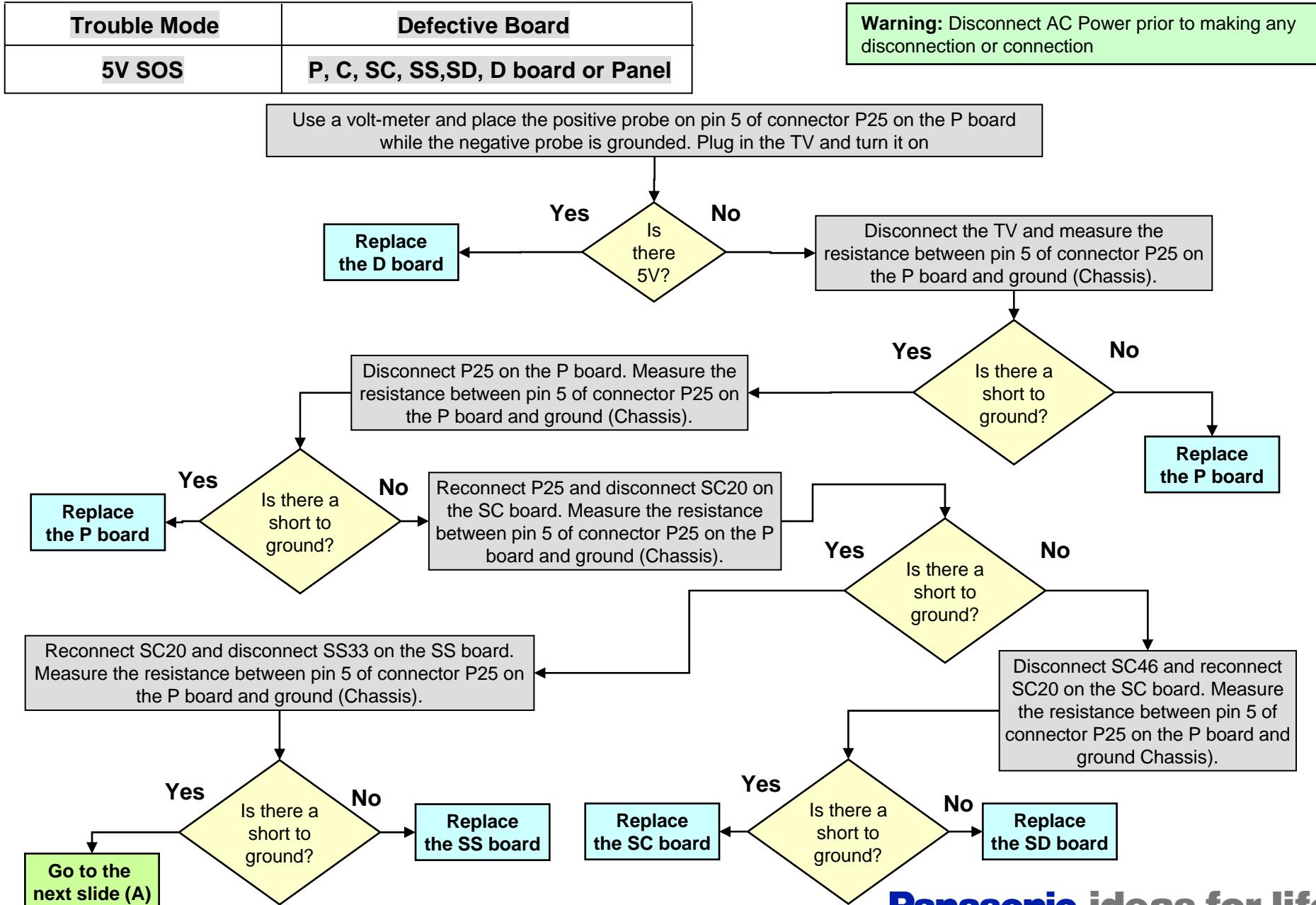
# LED blinks 5 times (Quick Troubleshooting)

Trouble Mode	Defective Board
5V SOS	P, D, Cs, SC, SS, D board or Panel

**Warning:** Disconnect AC Power prior to making any disconnection or connection



# LED blinks 5 times



Continue from the previous slide (A)

# LED blinks 5 times

Reconnect SS33 and disconnect D31, D32, and D33 on the D board (To get to this connectors, remove the A Board Block Assembly). Measure the resistance between pin 5 of connector P25 on the P board and ground (Chassis).

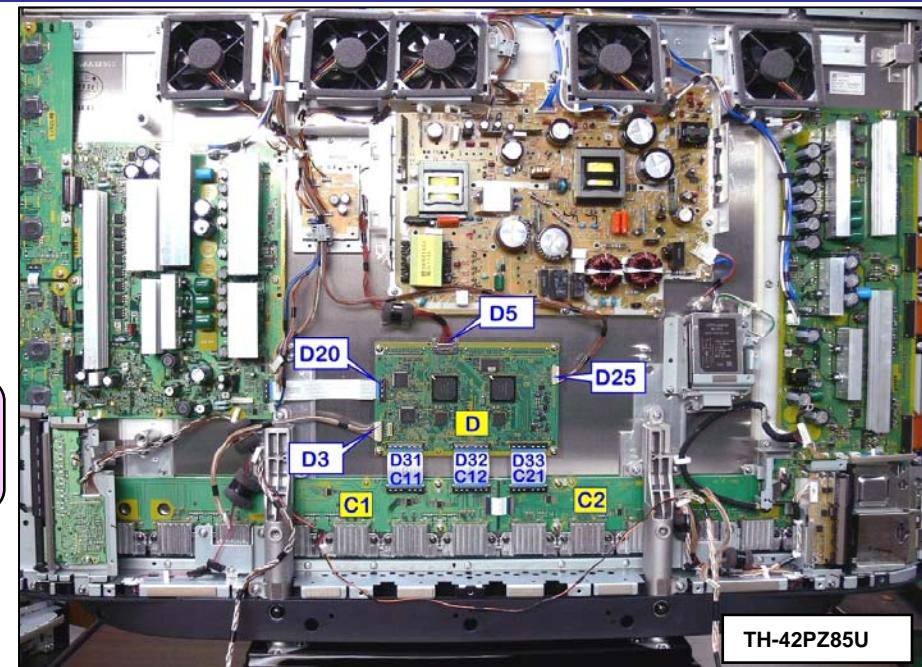
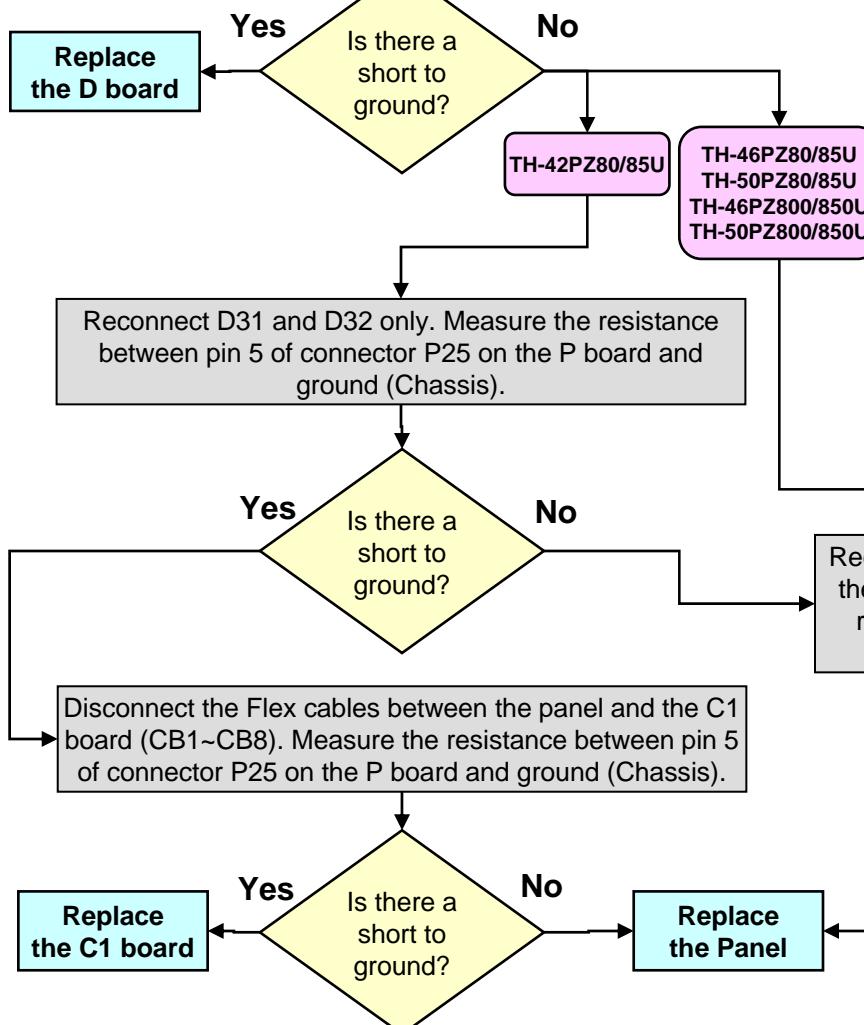


Figure 5

Reconnect D33 and disconnect the Flex cables between the panel and the C2 board (CB9~CB15). Measure the resistance between pin 5 of connector P25 on the P board and ground (Chassis).

Disconnect the Flex cables between the panel and the C1 board (CB1~CB8). Measure the resistance between pin 5 of connector P25 on the P board and ground (Chassis).

Replace the C1 board

Is there a short to ground?

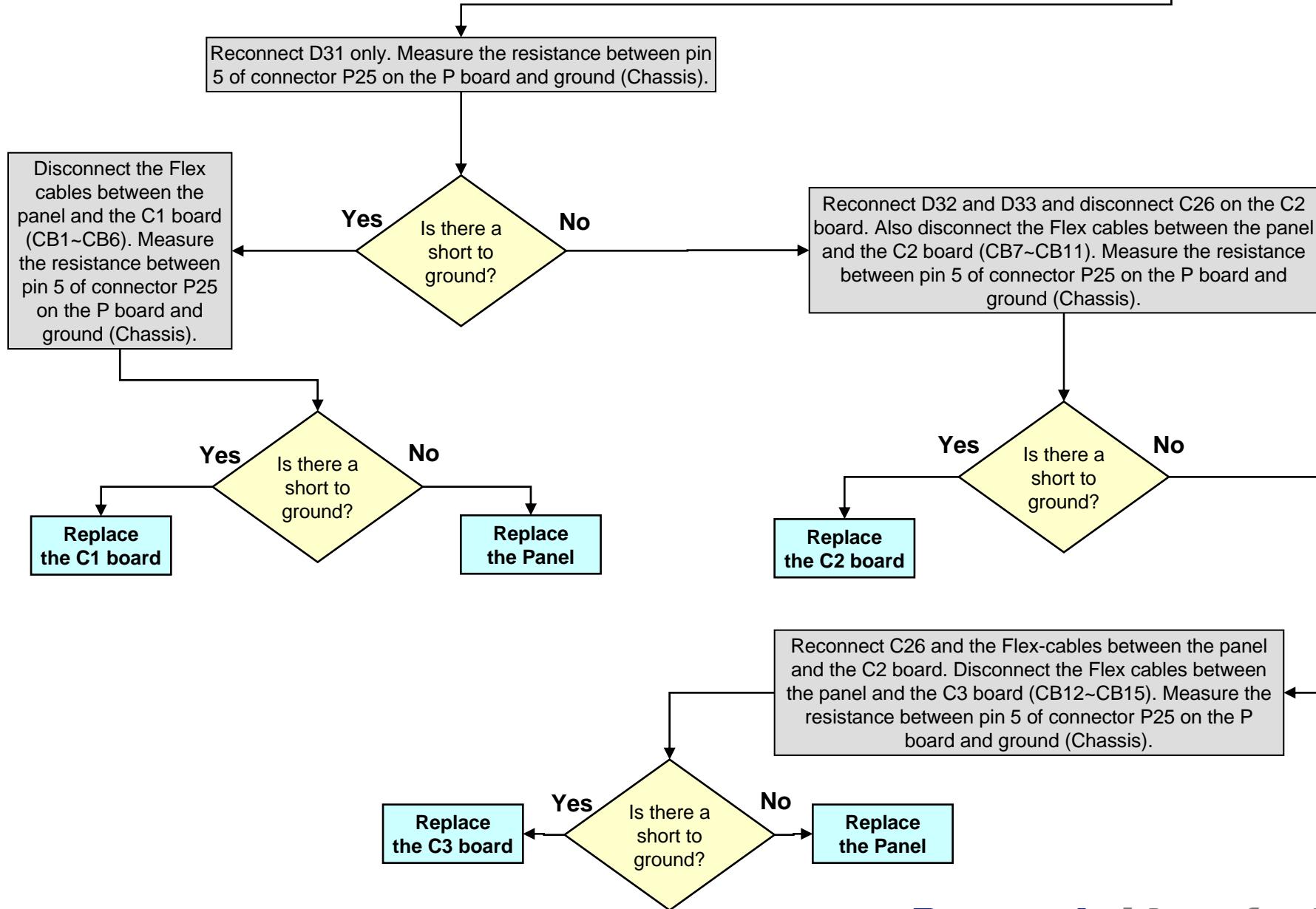
Is there a short to ground?

Replace the C2 board

Go to the next slide (B)

# LED blinks 5 times

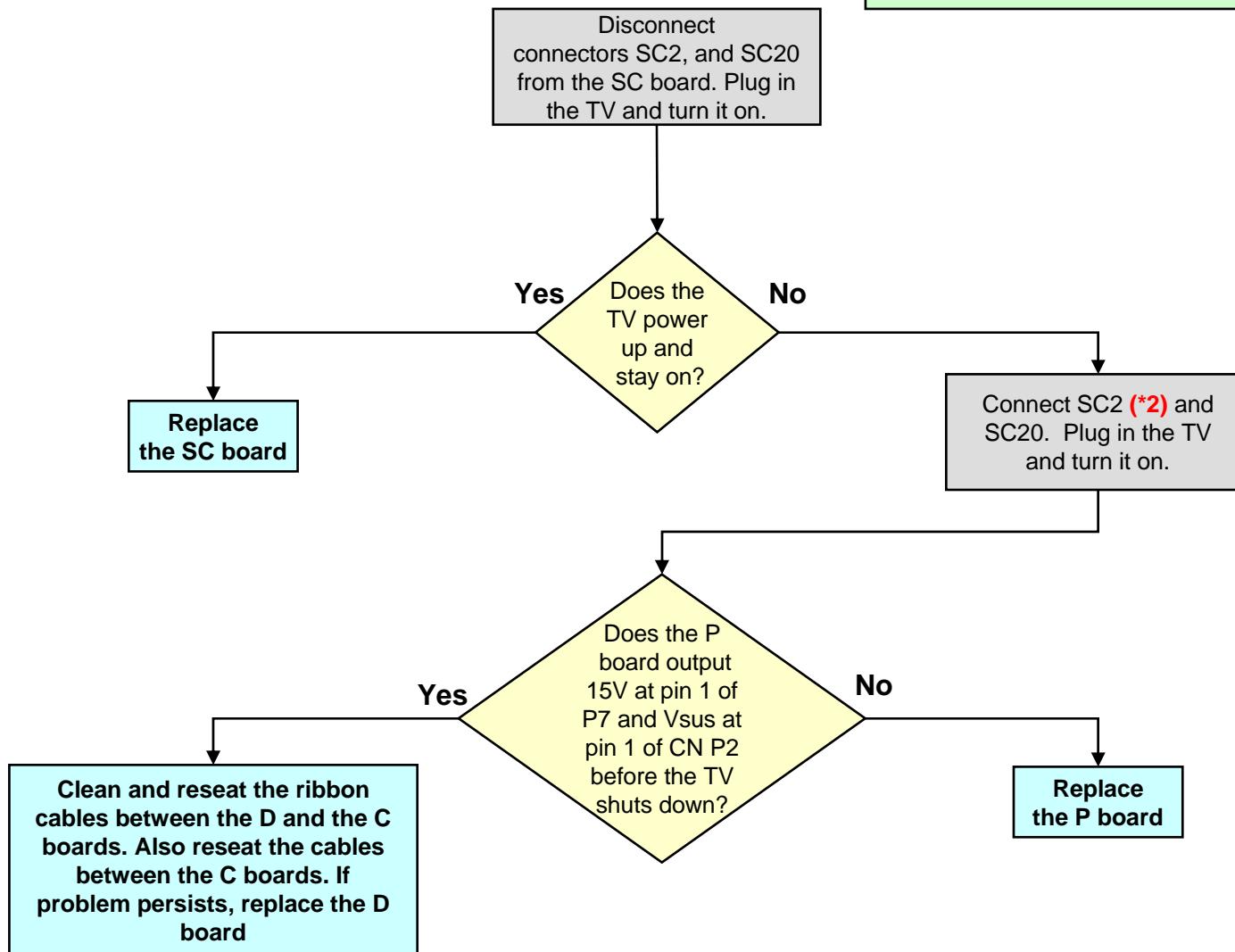
Continue from the previous slide (B)



# LED blinks 6 times

Trouble Mode	Defective Board (Possibility)
SC Energy Recovery SOS	SC, P Board (SC >D> P )

**Warning:** Disconnect AC Power prior to making any disconnection or connection  
**(\*2) CAUTION:** Before connecting P2/SC2 or P11/SS11, discharge is necessary to prevent potential shock caused by VSUS.



# SU/SD Board Isolation Procedure

Unlike previous models of Panasonic Plasma TVs, the 2008 models are designed not to turn-on if either of the SU and SD boards is disconnected. Disconnecting either causes the unit to shutdown and the power LED to blink 7 times.

## *Procedure to isolate the SU/SD board*

For SU board: Disconnect connectors SC41/SU41, SU11/SD11.

For SD board: Disconnect connectors SC42/SD42, SC46/SD46, and SU11/SD11.

Isolating the SU/SD board does not require the removal of its mounting screws.

Place a jumper between “VF Ground” (labeled H.V. DANGER) on the SU board or SD board and coil L801 on the SC board, see figure 6 and 7.

The jumper can be connected to the floating ground screws on the SU board, which are located above and below connector SU41, see figure 2.

**Caution:** Before turning the unit on, confirm that the jumper is not connected to a chassis ground screw, as this will cause severe damage to the unit. Confirm proper connection by measuring continuity between floating ground and chassis ground. The resistance should be in the kilo-ohms range.

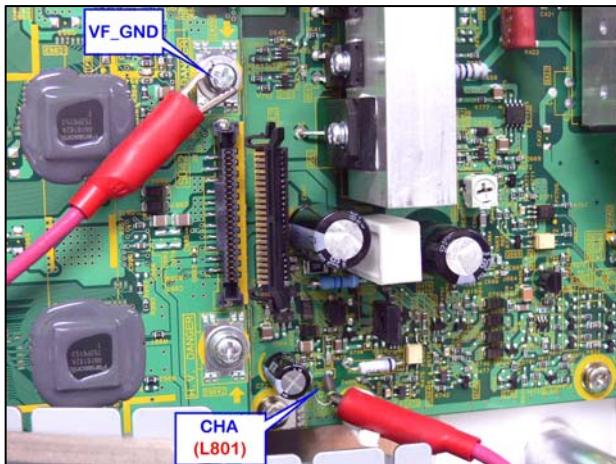


Figure 6

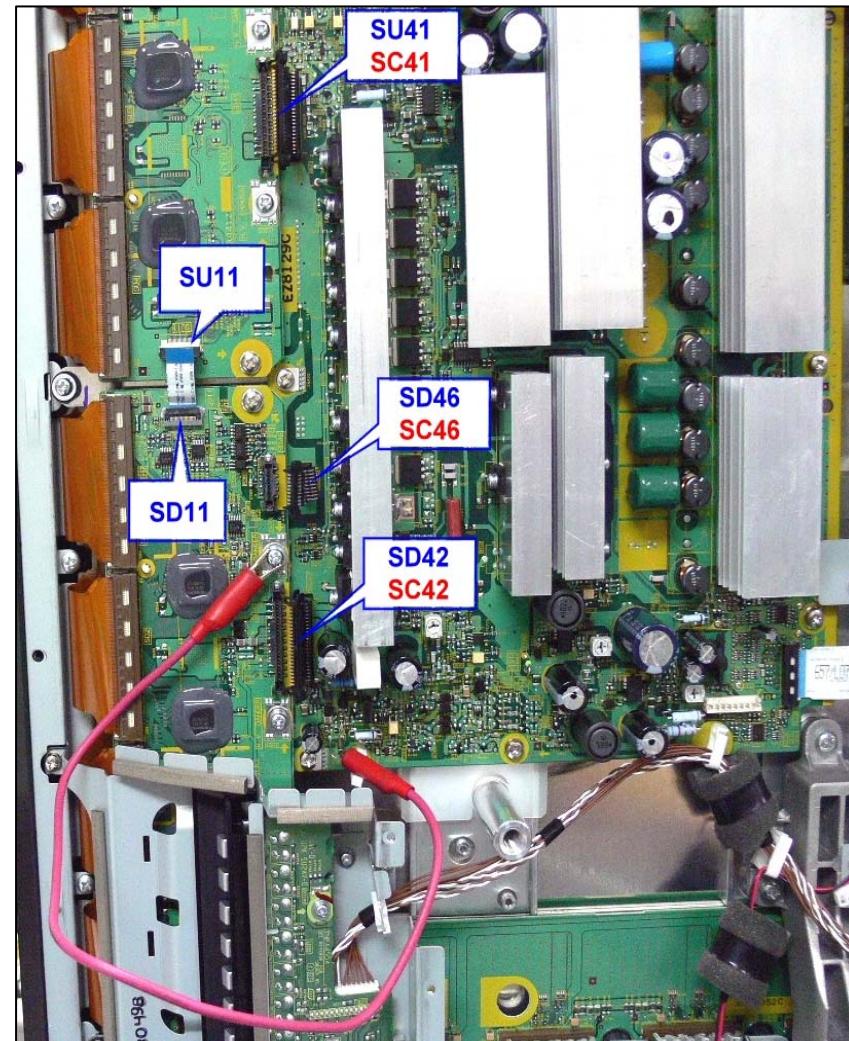
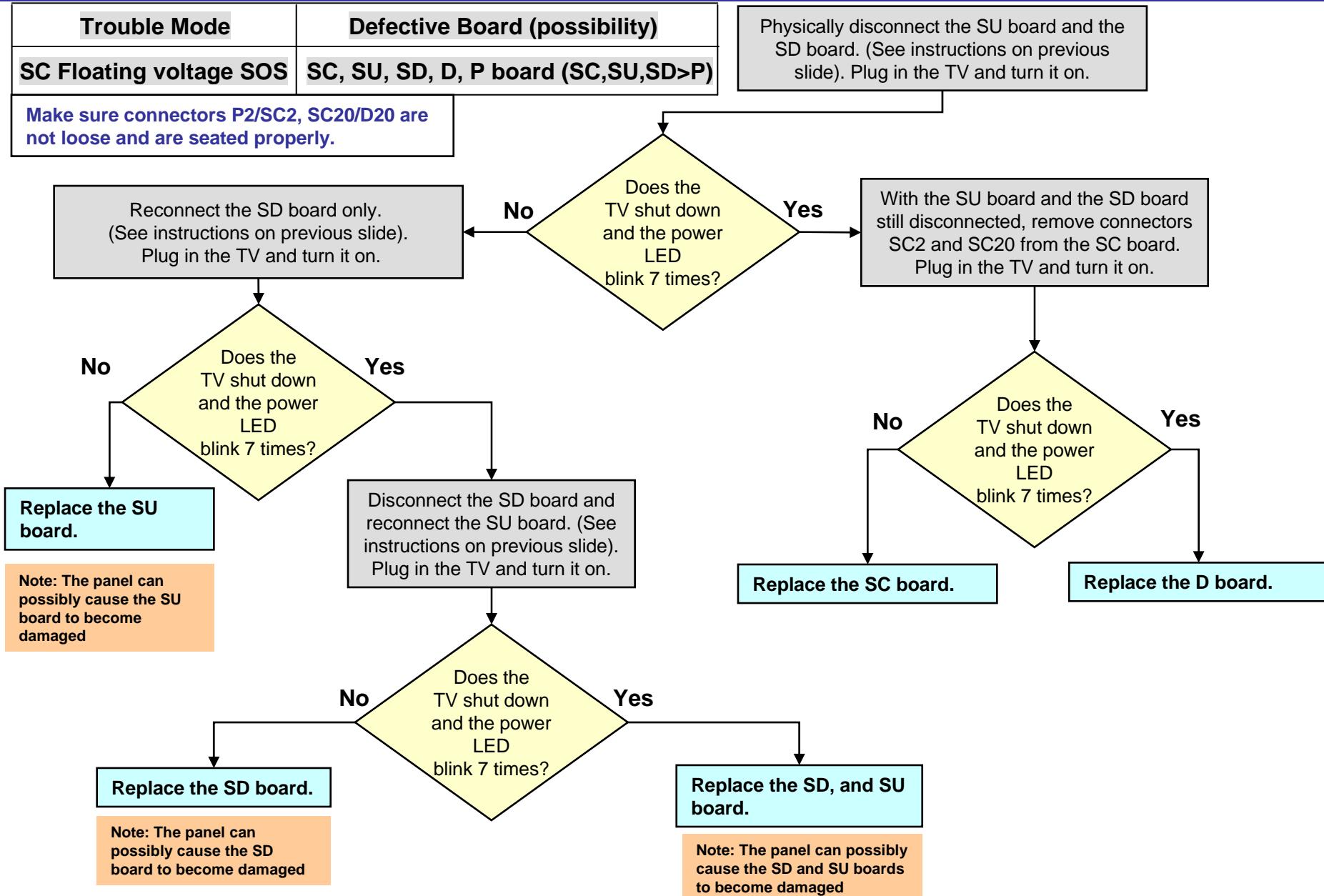


Figure 7

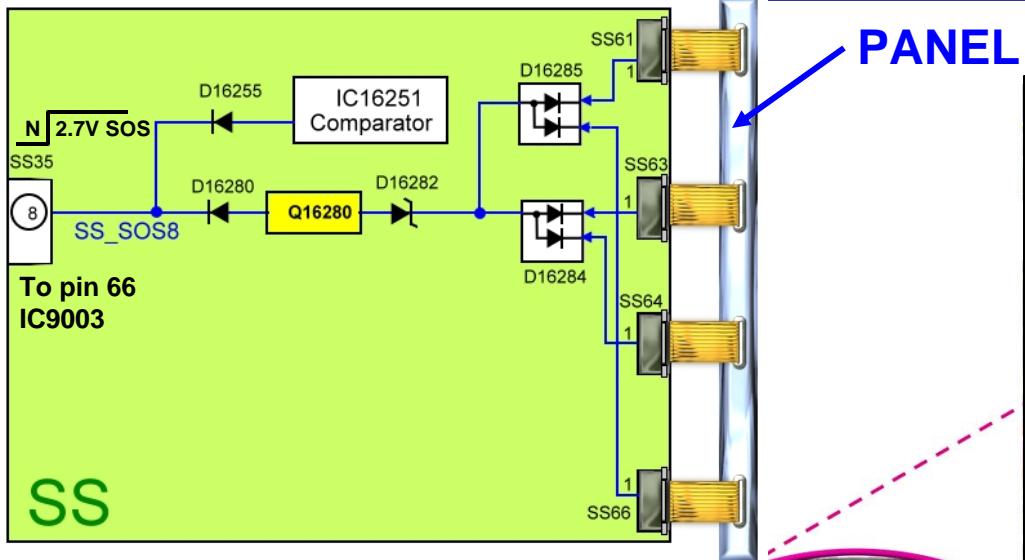
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# LED blinks 7 times

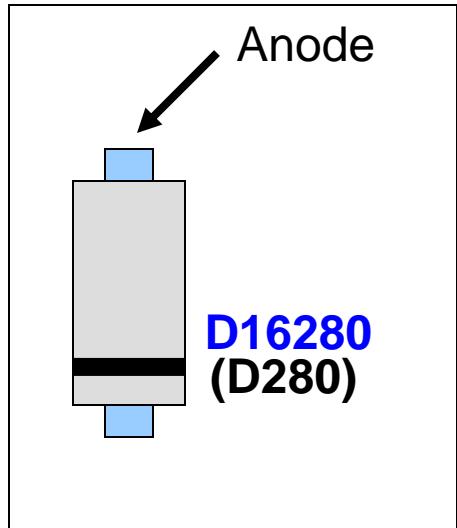


## D16280 (D280) Location

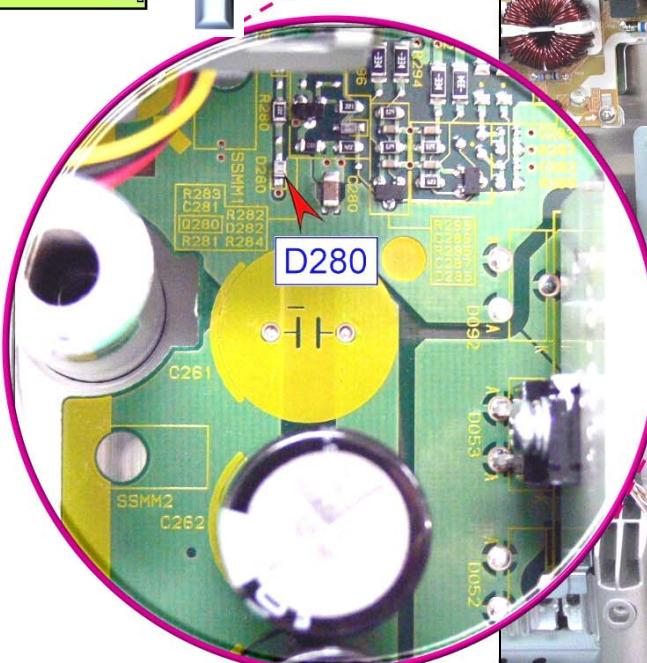
**Note:** The location for this component may not be the same for all models



**Figure 8**



**Figure 9**

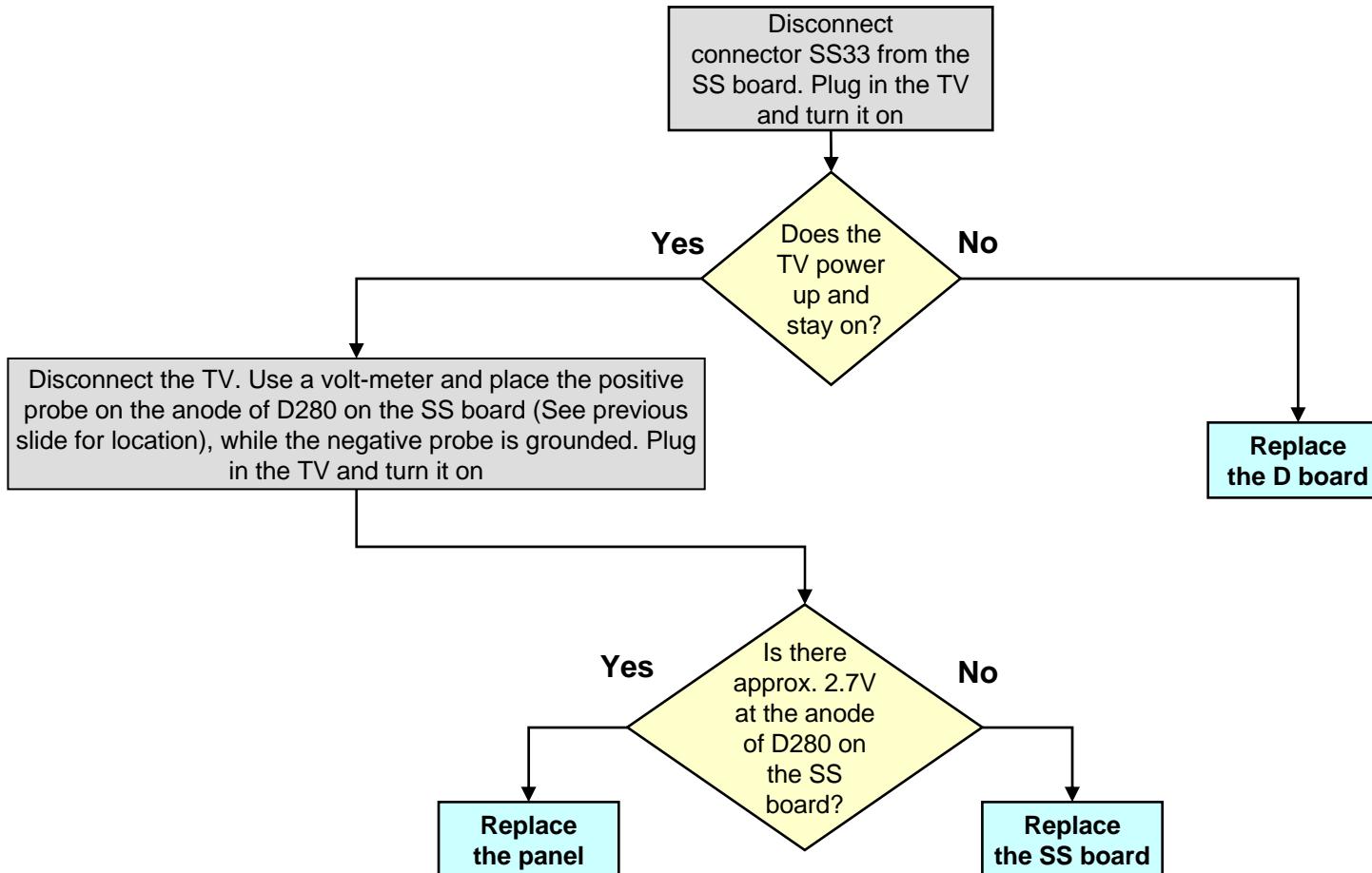


**Figure 10**

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# LED blinks 8 times

Trouble Mode	Defective Board (possibility)	Warning: Disconnect AC Power prior to making any disconnection or connection
SS Energy recovery SOS/Panel	SS, D board (SS>,D)/PDP	



# LED blinks 9 times

Trouble Mode	Defective Board
Panel Status	D Board

**Warning:** Disconnect AC Power prior to making any disconnection or connection

Replace the D board.

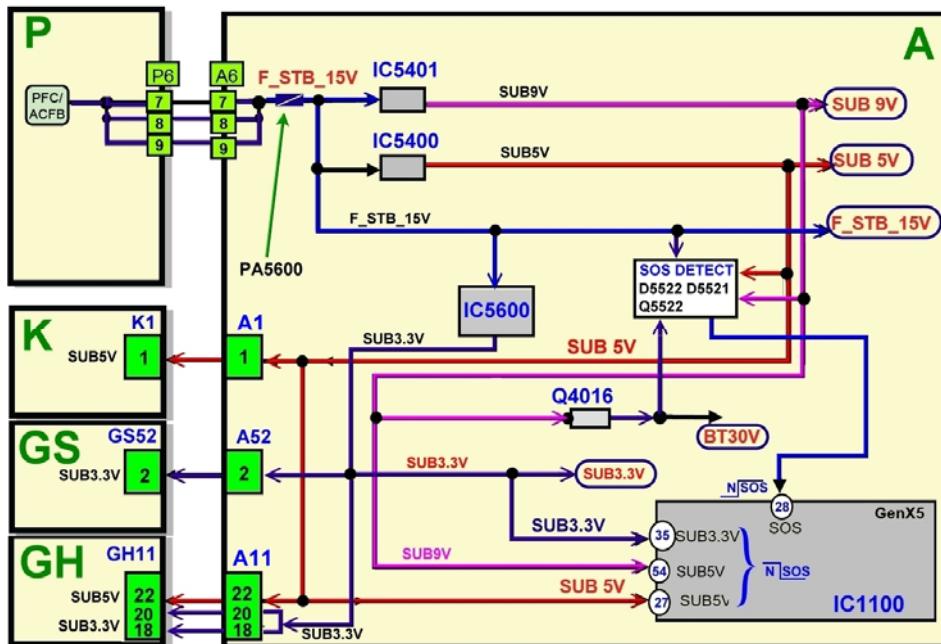
The power LED blinks 10 times at plug-in

Trouble Mode	Defective Board (Possibility)
Dead/No power	P, A, GS, K, GH

## **10 blinks condition can be caused by:**

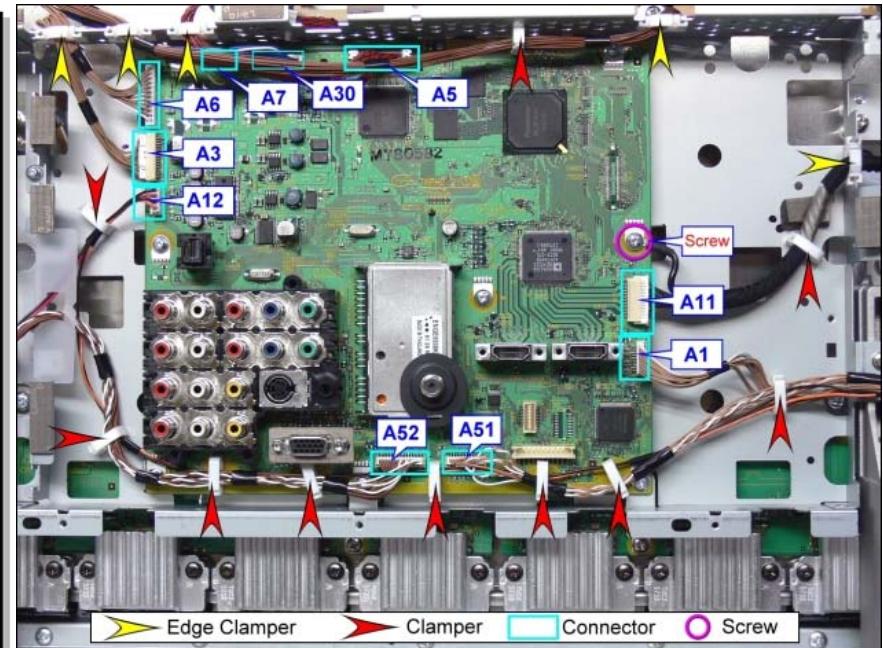
- Missing/Shorted F STB 15V
- Missing/Shorted SUB9V, SUB5V, and SUB3.3V
- Wrong diagnostic by the A board

## Sub-Voltages Distribution Diagram



**Figure 11**

## A board Connectors Location



**Figure 12**

# The power LED blinks 10 times at plug-in

Trouble Mode	Defective Board (Possibility)
Dead/No power	P, A, GS, K, GH

**NOTE:** When taking voltage reading, place your meter's probe on the test point or pin indicated before connecting the TV to the AC line. The voltage you intent to measure may only appear for a brief moment.

**Warning:** Disconnect AC Power prior to making any disconnection or connection

Unplug the TV. Using a voltmeter, place the positive probe at pin 6 of connector P7 while the negative probe is grounded. Plug in the TV

NO

Do the AC relays click after the TV is plugged into the AC line?

Yes

NO

Is there 3.2V present for a couple of seconds when the TV is plugged into the AC line?

Yes

Replace The P board

NO

Do the AC relays click after the TV is plugged into the AC line?

Yes

Replace The A board

If cable between connectors K1 and A1 is OK, Replace the K board.

Go to the Next slide

# The power LED blinks 10 times at plug-in

**NOTE:** When taking voltage reading, place your meter's probe on the test point or pin indicated before connecting the TV to the AC line. The voltage you intent to measure may only appear for a brief moment.

Continue from the previous slide

**Warning:** Disconnect AC Power prior to making any disconnection or connection

Unplug the TV and disconnect connector P6 on the P board. Using a voltmeter, place the positive probe at pin 7 of connector P6 while the negative probe is grounded. Plug in the TV

No

Is there 15V at pin 7 of connector P6/A6 when the TV is plugged into the AC line?

Yes

Unplug the TV. Disconnect connectors A1, GS52, and GH11 on the A board. Plug in the TV

No

Does the power LED still blink 10 times?

Yes

Replace The A board

No

Is there 15V present when the TV is plugged into the AC line?

Yes

Replace The P board

Replace The A board

No

Does the power LED blink 10 times?

Yes

No

Unplug the TV. Reconnect connector A52 and leave connector GH11 disconnected. Plug in the TV

Replace the K board.

No

Does the power LED blink 10 times?

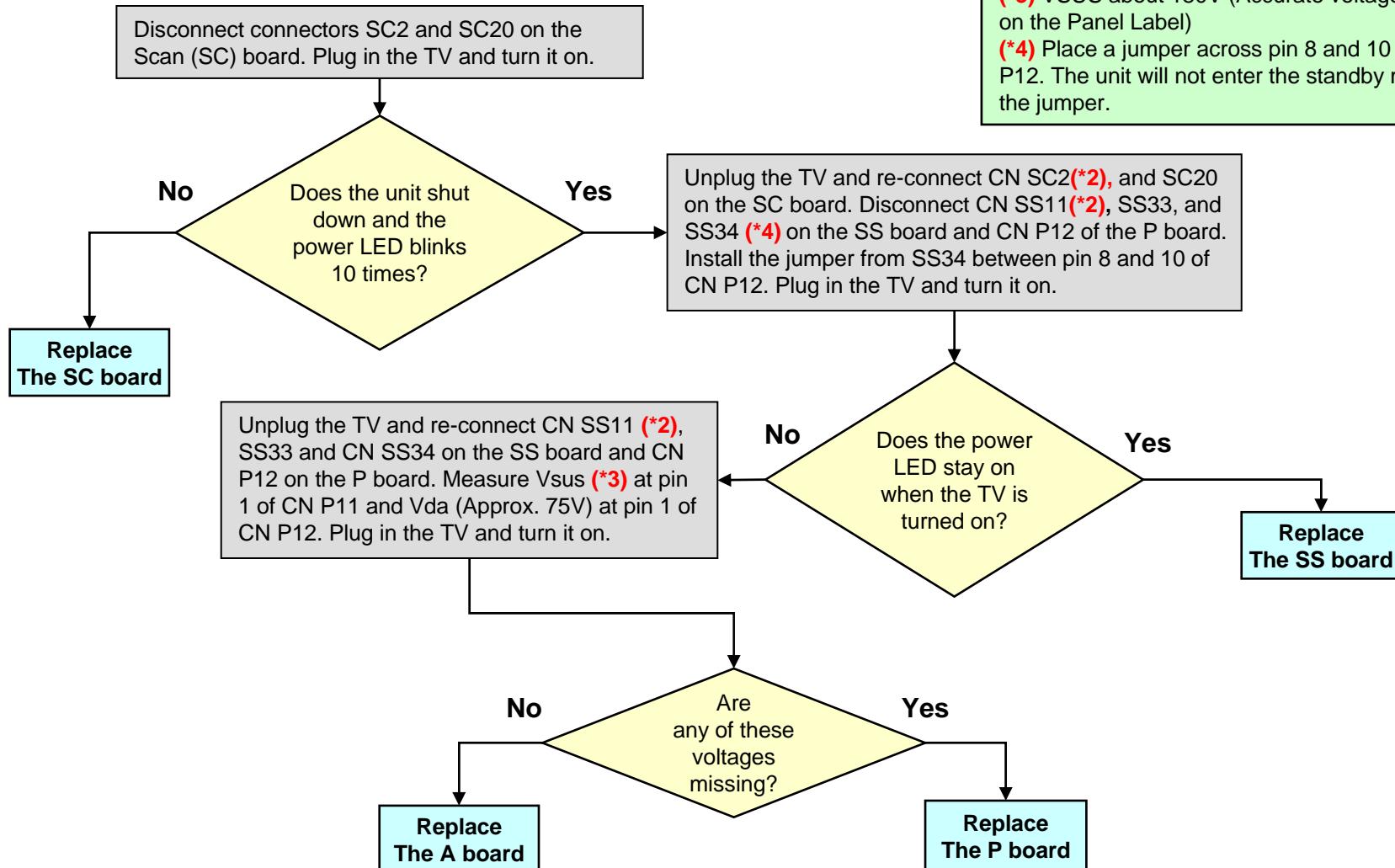
Yes

Replace the GS board.

Replace the GH board.

# LED blinks 10 times after pressing the power button

Trouble Mode	Defective Board
<b>SUB 5V SOS, Main 3.3V SOS DTV 9V SOS, Tuner Power SOS</b>	<b>P, A, SC, SS, GS, G Board</b>



Note: CN = Connector

# LED blinks 11 times

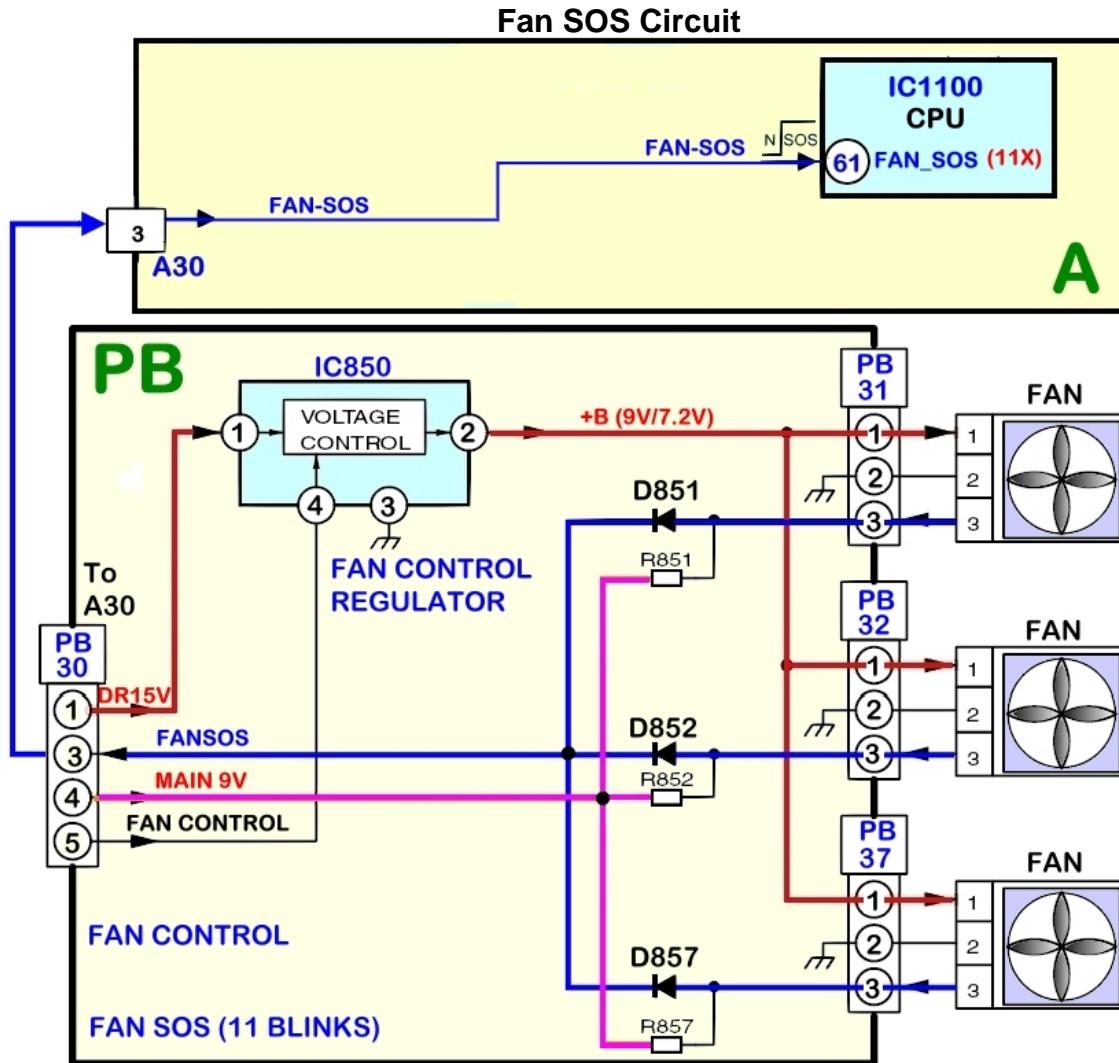
Trouble Mode

Defective Board (Possibility)

Fan SOS

Fans, PB, A Board

Warning: Disconnect AC Power prior to making any disconnection or connection



## 11 blinks condition happens:

1. If one of the fans opens or increases resistance.
2. If the PB board becomes defective triggering shutdown.
3. If the CPU in the A board gives a wrong diagnostic triggering shutdown

Figure 13

# LED blinks 11 times

Trouble Mode

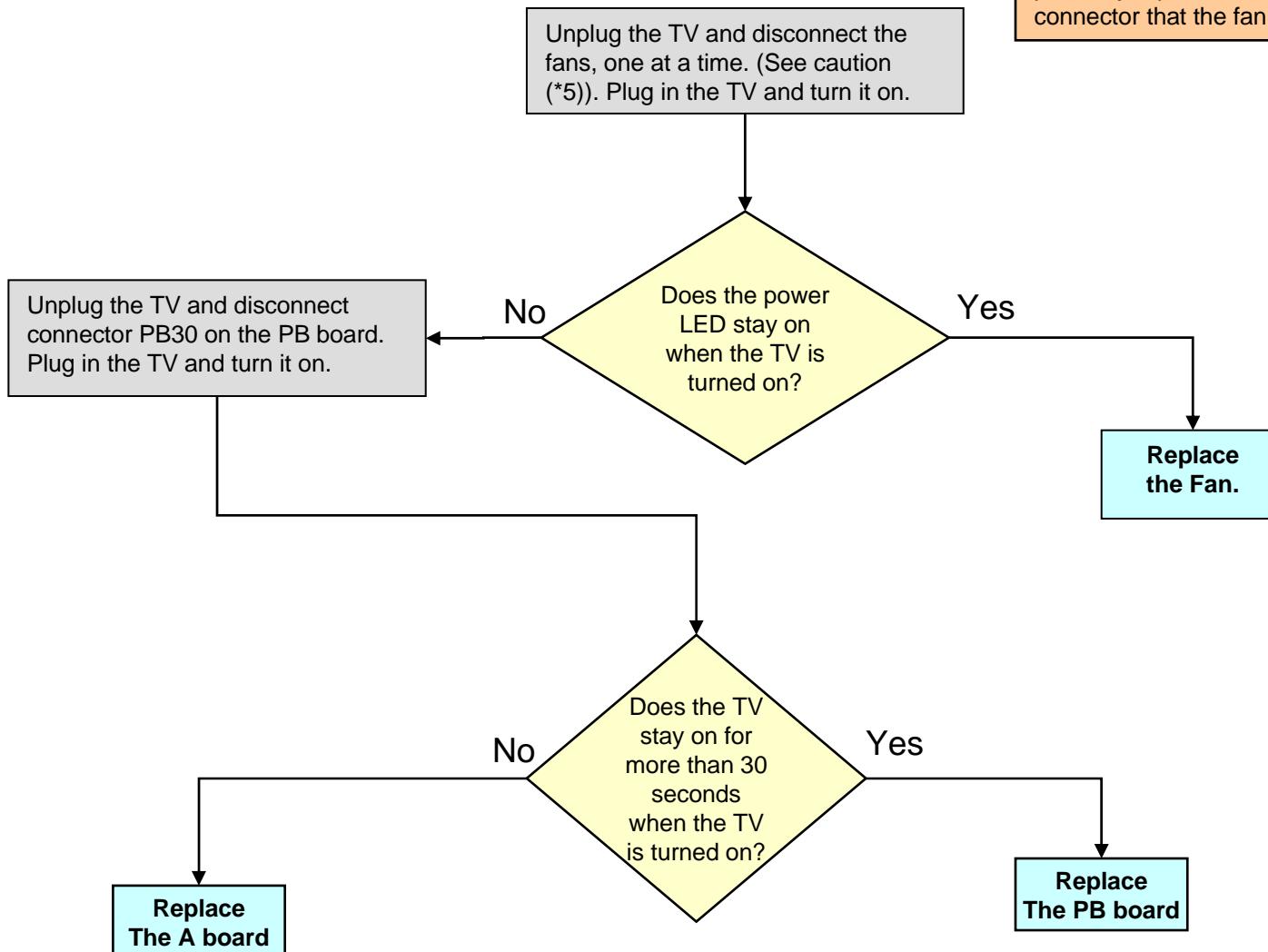
Defective Board (Possibility)

Fan SOS

Fans, PB, A Board

**Warning:** Disconnect AC Power prior to making any disconnection or connection

**Caution (\*5)** When a fans is disconnected, place a jumper between pins 2 and 3 of the connector that the fan was removed from.



# LED blinks 12 times

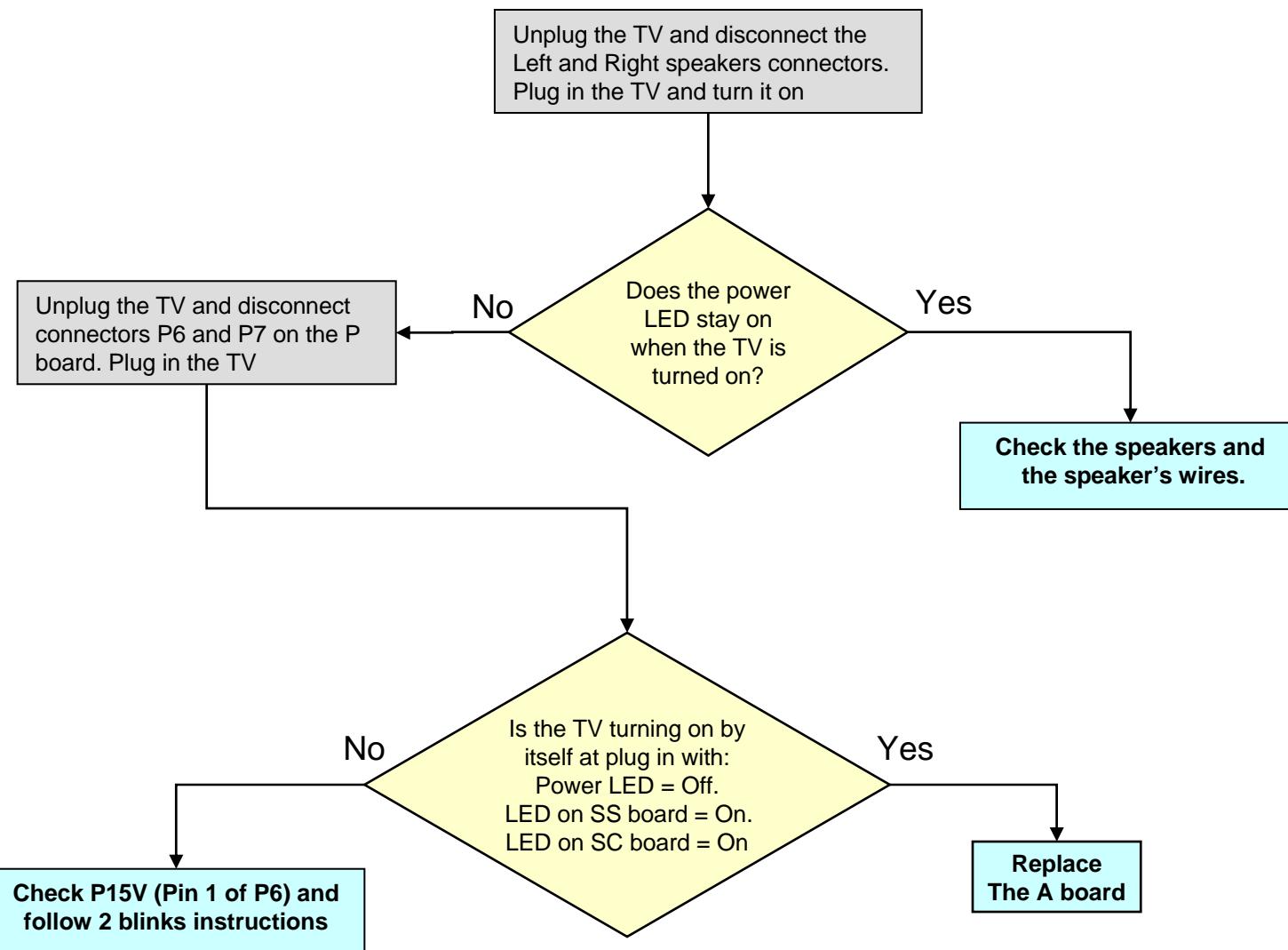
Trouble Mode

Defective Board (Possibility)

**Warning:** Disconnect AC Power prior to making any disconnection or connection

Sound SOS

Speakers, A Board



# LED blinks 13 times

Trouble Mode	Defective Board	Warning: Disconnect AC Power prior to making any disconnection or connection
Communication error with IC8001	A Board	

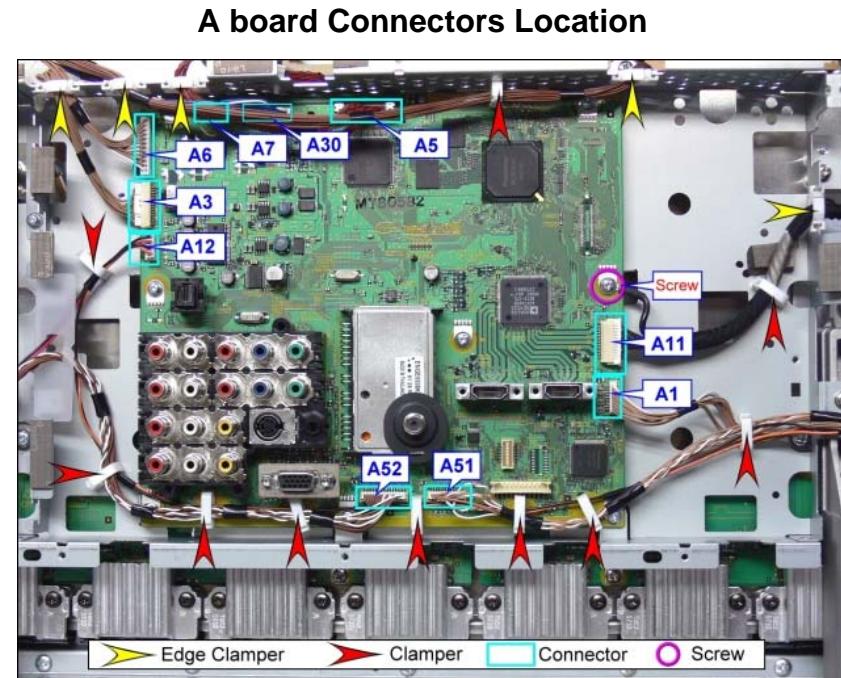
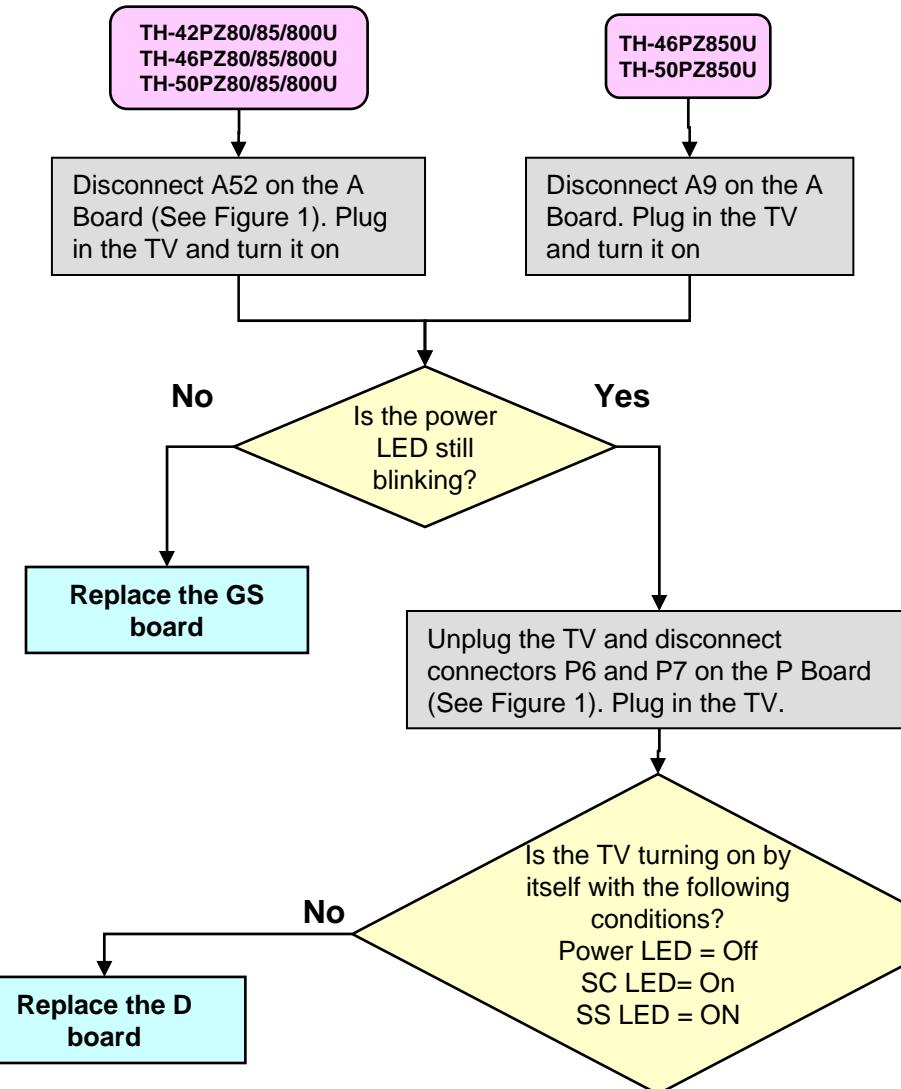
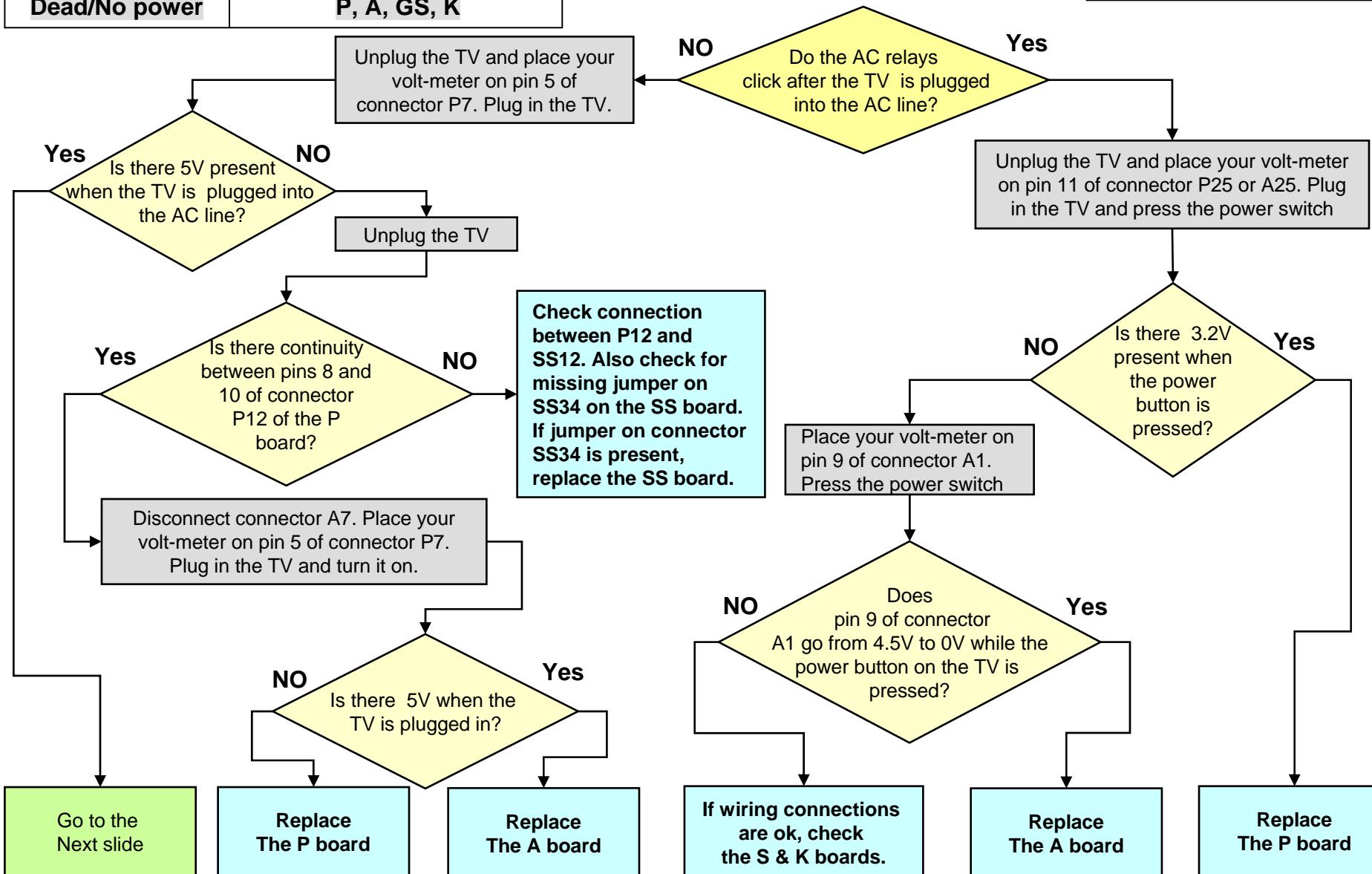


Figure 14

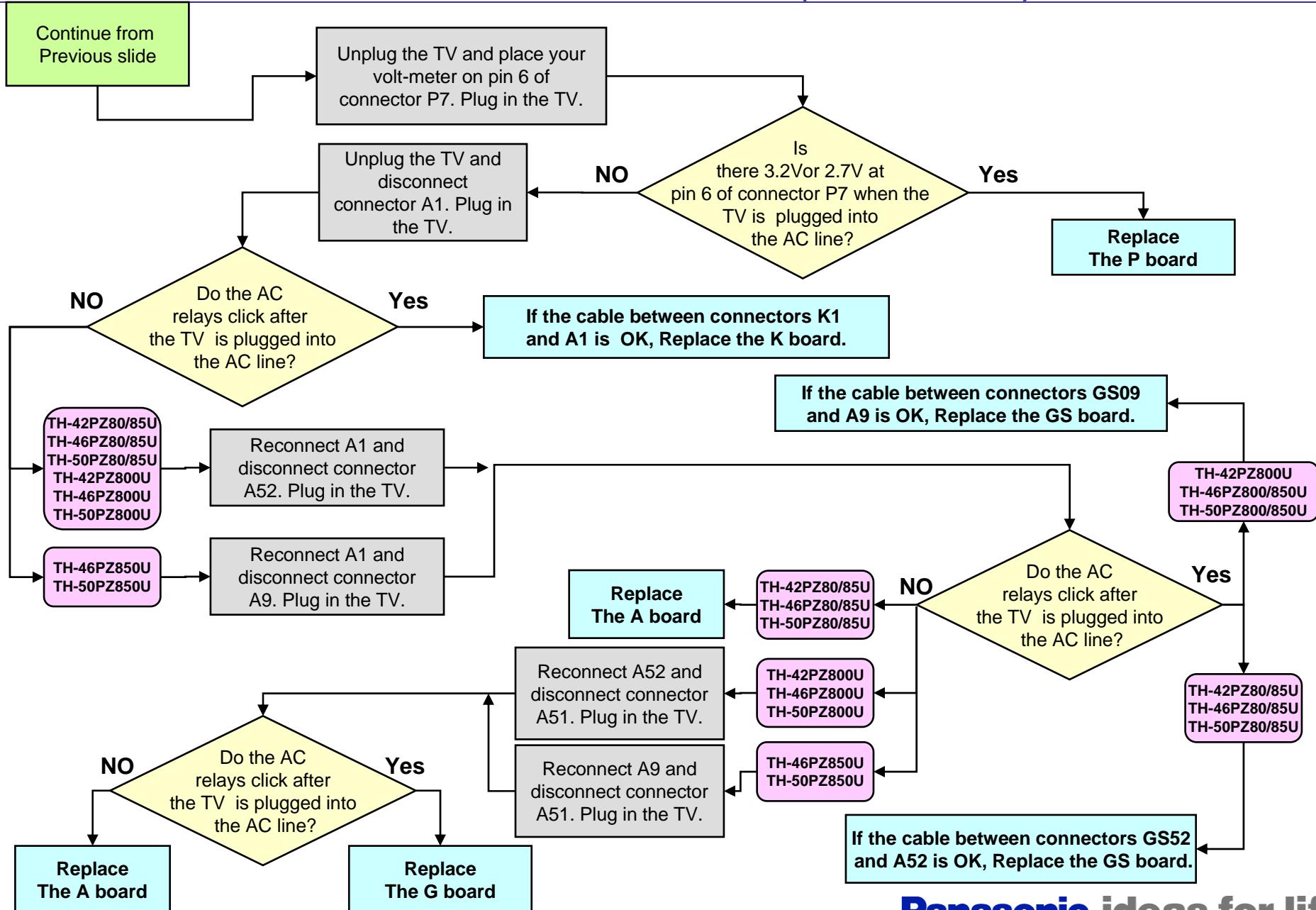
# No Power/Dead Unit

**Warning:** Disconnect AC Power prior to making any disconnection or connection

Trouble Mode	Defective Board (Possibility)
Dead/No power	P, A, GS, K

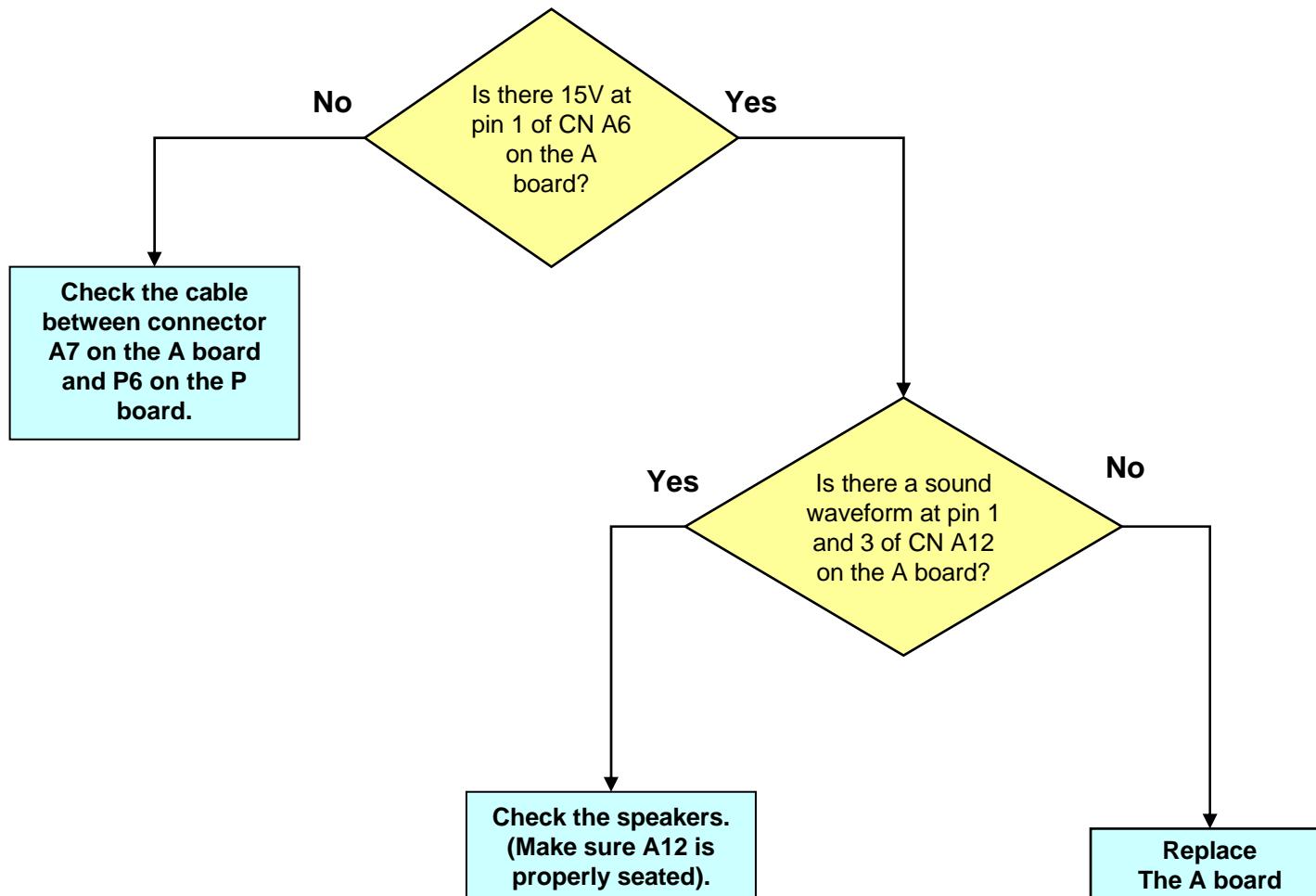


# No Power/Dead Unit (Continue)



# No Sound

**Warning:** Disconnect AC Power prior to making any disconnection or connection



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# Troubleshooting for Picture Problems

# Diagnostic Method for Troubleshooting PDP Television

## <Introduction>

### 1. There are two kinds of picture problem

- 1) Abnormal picture
- 2) No picture

### 2. Basic concept of determining the defective board

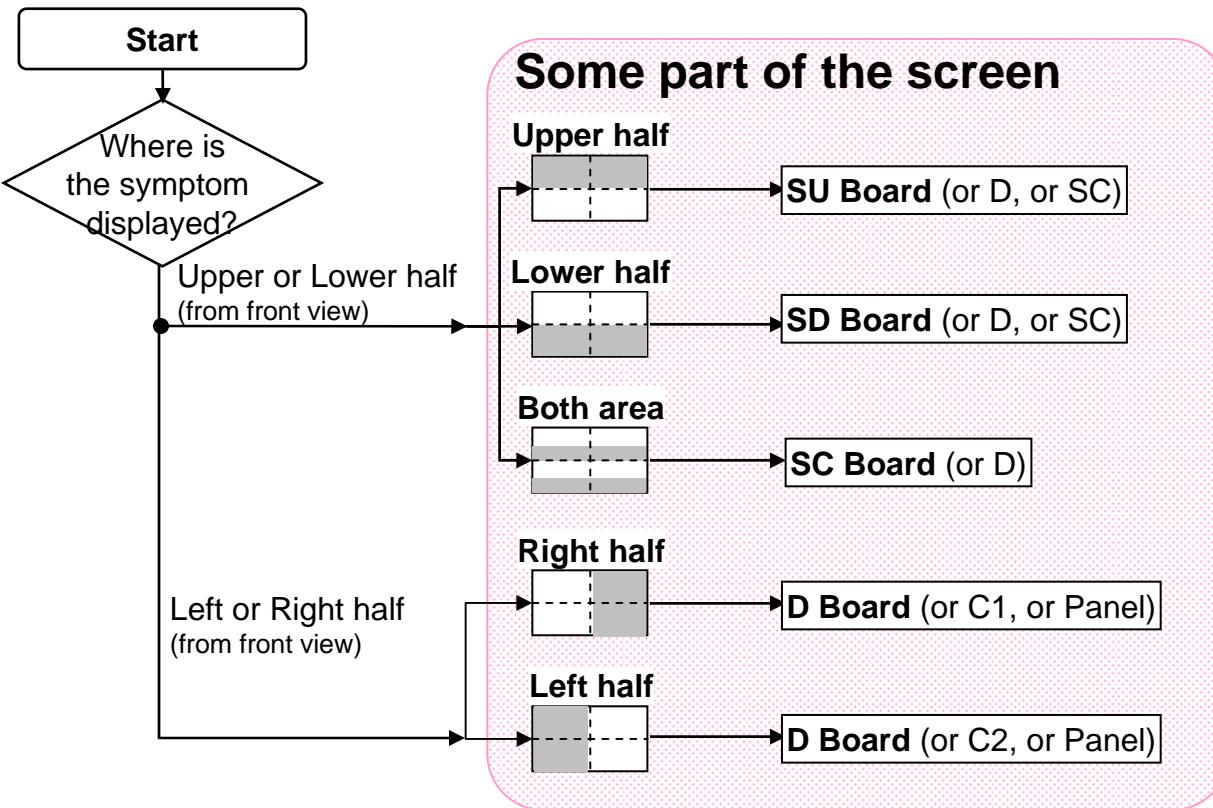
- 1) Which area is the symptom displayed on the screen?
  - A. Part of the screen
  - B. All over the screen

### 3. Adjustment after PCB exchange

- 1) After exchanging the following boards, voltage adjustment is required.  
P board, SC board, SS board => Please refer to "Service Manual".

# Troubleshooting for Picture Trouble

## <How to determine the defective board>



\*Note : Panel gas leakage



Because of a very small crack in the panel, gas leakage will start. In this picture, gas leakage started at the left top corner. Finally, gas leakage will lead to the symptom **“No picture with buzz noise”**.

# Diagnosis for Picture Problem (All Over the Screen)

## <Symptom>

Abnormal Color, Vertical Line, Sync Error, Noise Picture

## <Model>

All Models

## <Sample Picture>

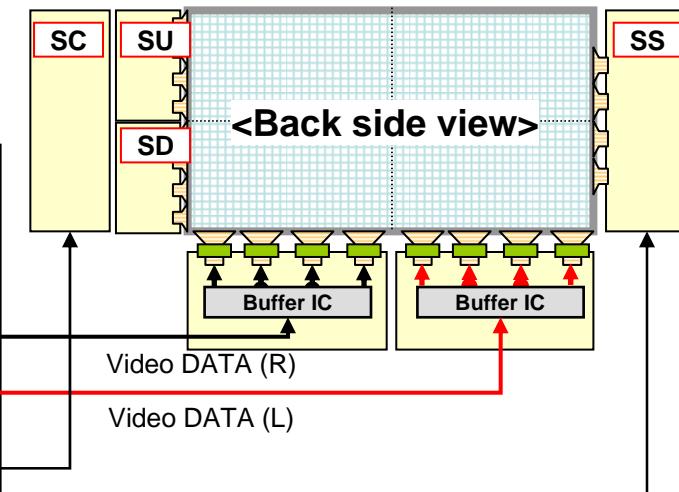
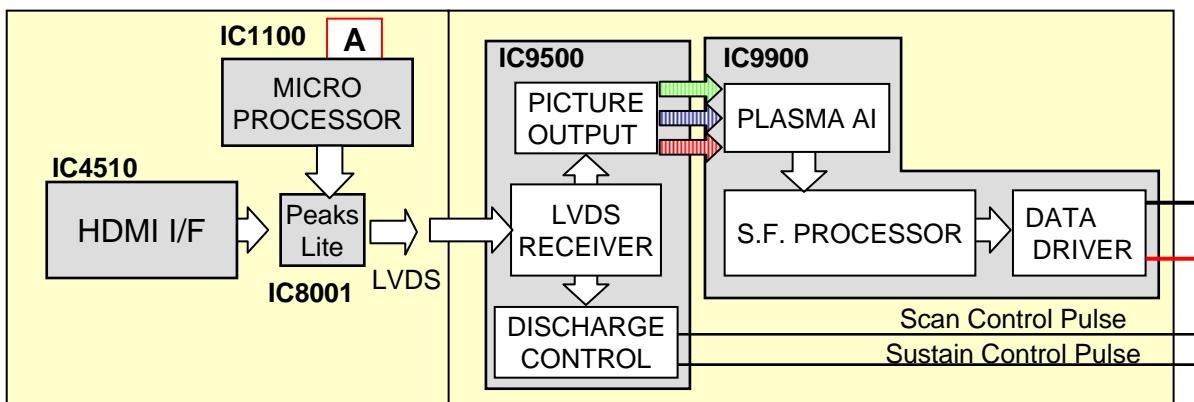


## <Possible Cause>

D Board, SC Board, SU Board, SD Board

## <Block Diagram>

e.g. TH-42PZ80U



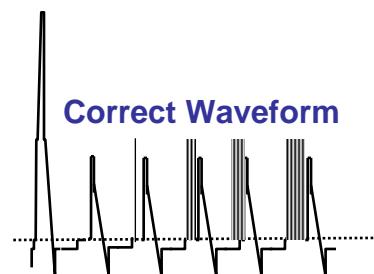
# Diagnosis for Picture Problem (All Over the Screen)

## <Diagnosis (2)>

Confirm the waveform at "TPSC1" of the SC board

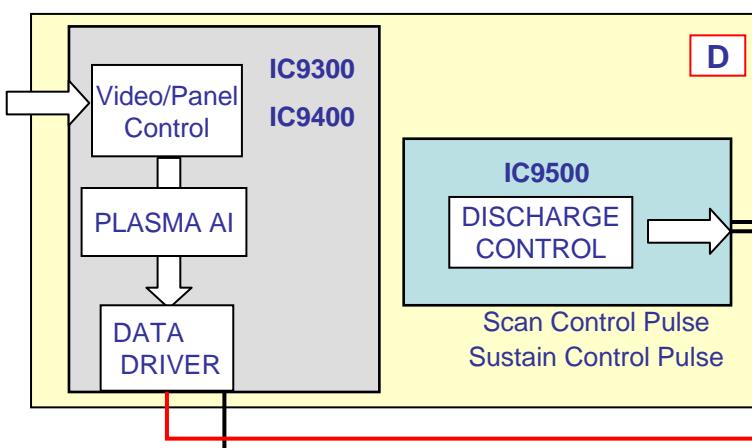
## <Result>

Waveform OK



## <Cause>

**D Board defect**



## <Result>

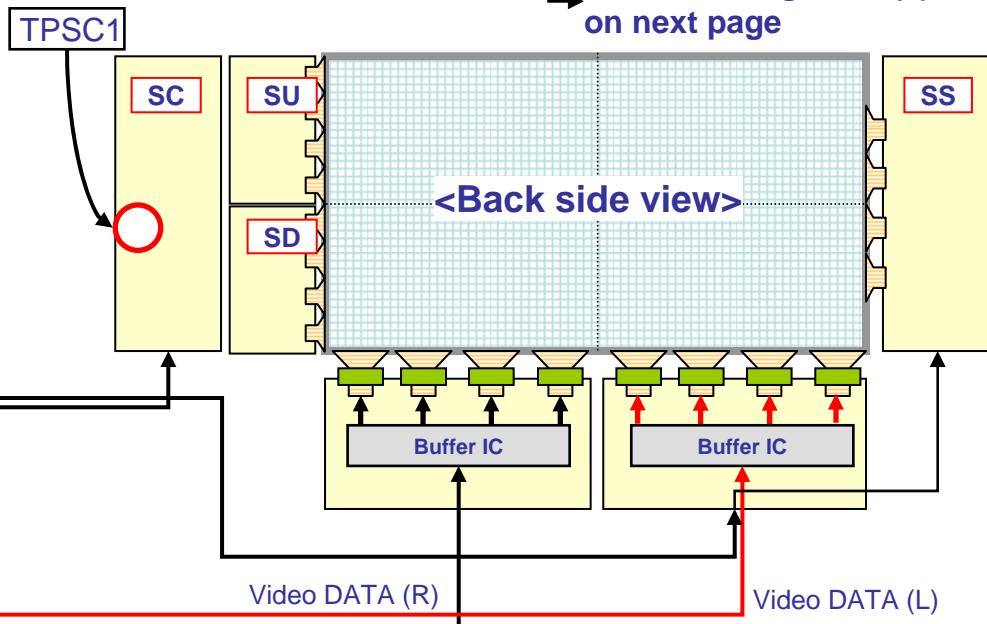
Waveform NG

Sample of NG Waveform

Here

**SC,SU,SD Board defect**

Refer to "Diagnosis (3)"  
on next page



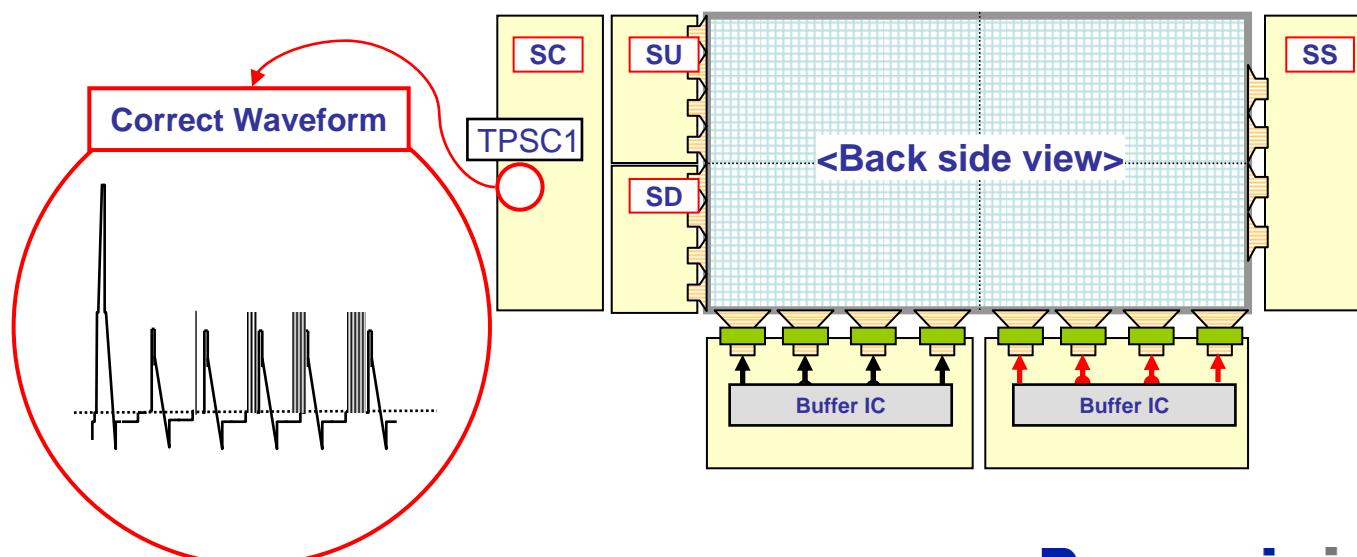
# Diagnosis for Picture Problem (All Over the Screen)

## <Diagnosis (3)>

Confirm the waveform at “TPSC1” after removing the SU or SD Board from the SC Board

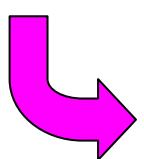
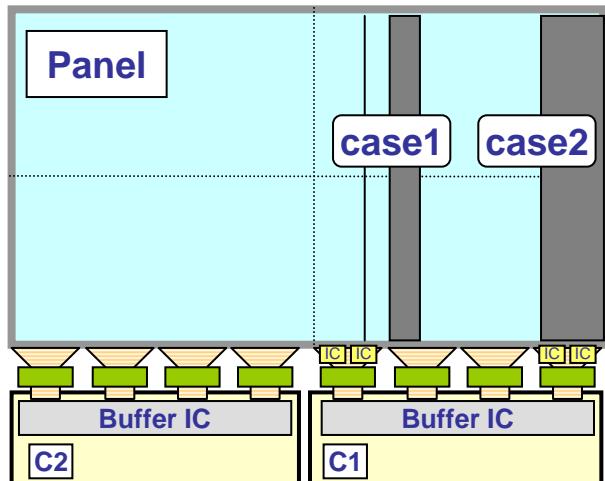
## <Result>

Situation	Condition	Condition 2	Cause
Disconnect <b>SU Board</b> (Connect SD)	<u>Waveform OK?</u>	<b>Bottom half of Picture OK?</b>	<b>SU Board</b>
Disconnect <b>SD Board</b> (Connect SU)	<u>Waveform OK?</u>	<b>Upper half of Picture OK?</b>	<b>SD Board</b>
Disconnect the <b>SU and SD Boards</b>	<u>Waveform OK?</u>	<b>Screen should be black</b>	<b>SC Board</b>



# Diagnosis of Vertical Line Problem

## NG Area (Front view)



Drive  
IC(2)  
inside

case1 Thin vertical line  
or 1 block not lighting

PDP panel (Driver IC) NG  
( or D board, or C board )

1 Line

1 Block

PDP Panel

Driver IC

Driver IC

FPC

C Board

Buffer

D Board

case2 A number of blocks  
not lighting

D board (or C board) NG

2 Blocks

PDP Panel

Driver IC

Driver IC

FPC

C Board

Buffer

D Board  
or

# Picture Trouble at Upper or Lower half

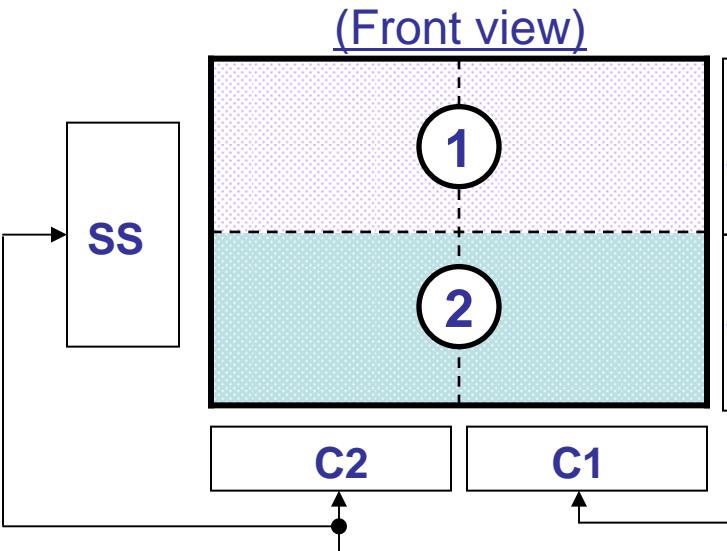
## <Symptom>

No Picture, Picture noise, Full Horizontal line, etc.

## <Models>

42 inch (HD Panel)

## <NG Area>



## <Defective board>

- ① Trouble at Upper half : **SU-board (SC or D) defect**
- ② Trouble at Lower half : **SD-board (SC or D) defect**

(\*) Full Horizontal line at both area : **SS-board (D) defect**

## <Actual Symptom>

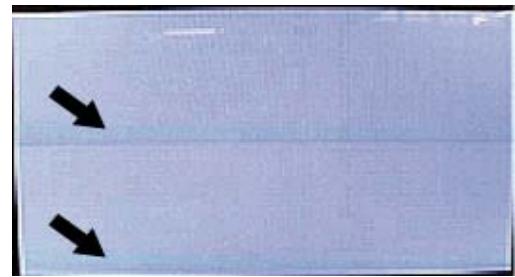
Symptom : Horizontal line (Lower side)  
Result : SD board



Symptom : Horizontal line (Upper side)  
Result : D board



Symptom : Horizontal line (Both area)  
Result : SS board



# Picture Trouble at Right or Left half (50 Inch)

## <Symptom>

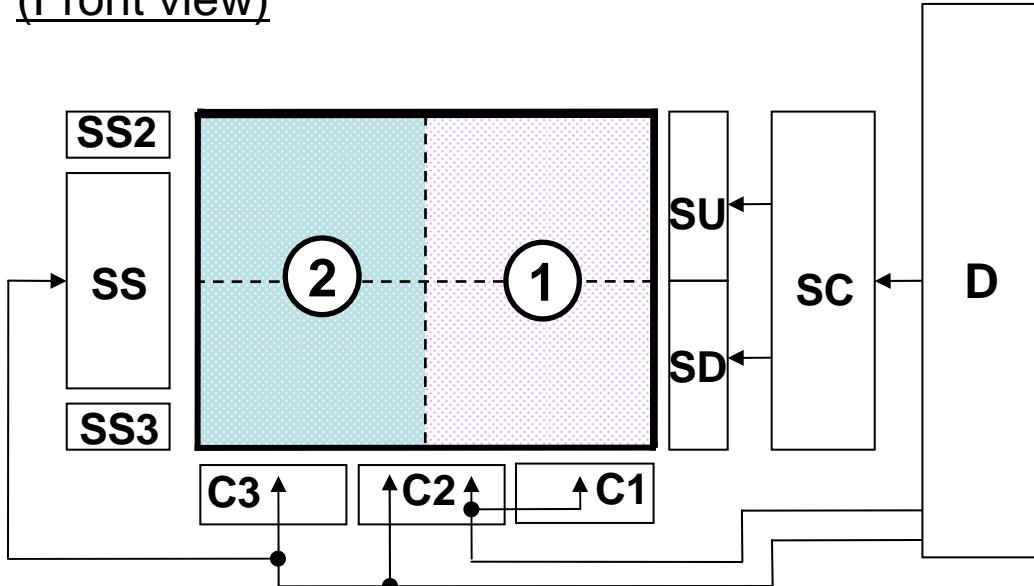
No Picture, Picture noise, etc.

## <Models>

50inch (HD Panel)

## <NG Area>

(Front view)



## <Defective board>

- ① Trouble at Right half : D-board defect
- ② Trouble at Left half : D-board defect

## <Actual Symptom>

Symptom : Cyan noise (Right side)  
Result : D board



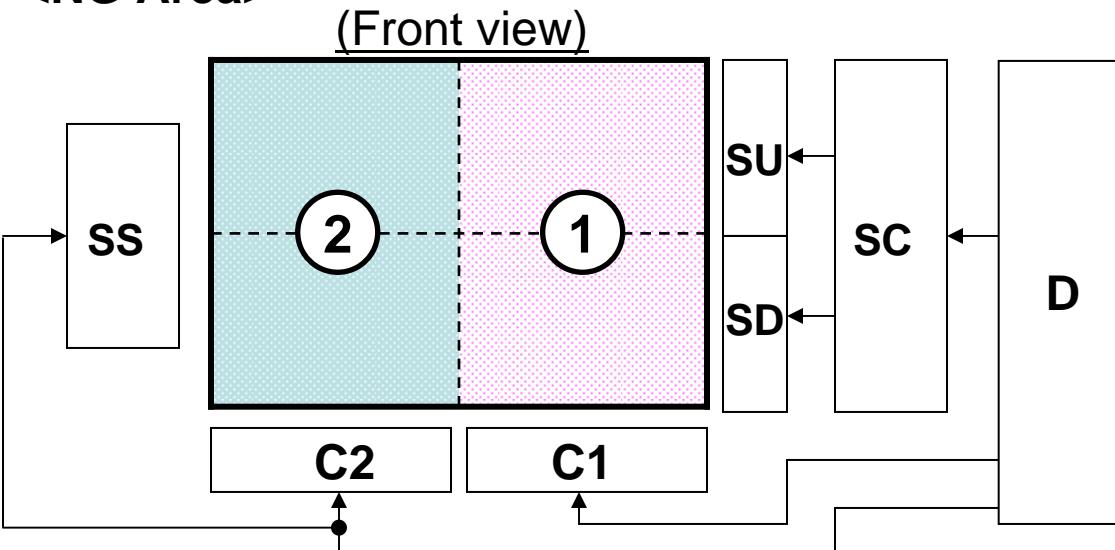
# Picture Trouble at Right or Left half (42 Inch)

## <Symptom>

No Picture, Picture noise, Full Vertical line, etc.

42 inch (HD Panel)

## <NG Area>



## <Defective board>

- ① Trouble at Right half : **D or C1 board (Panel) defect**
- ② Trouble at Left half : **D or C2 board (Panel) defect**

## <Actual Symptom>

Symptom : Vertical line

Result : Panel



# Picture Trouble in 50 Inch Models

## <Symptom>

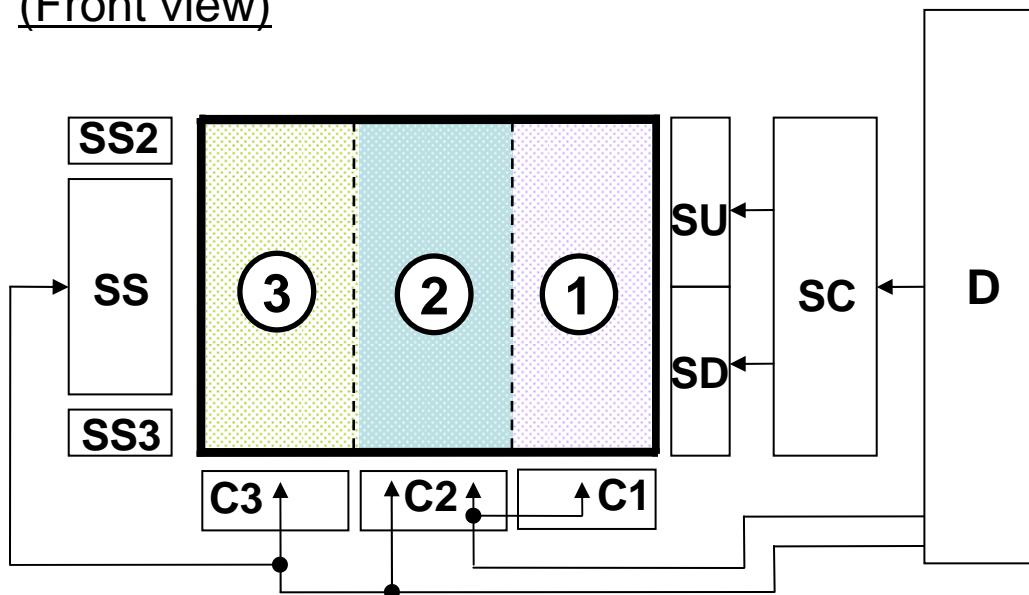
No Picture, Picture noise, Half Vertical line, etc.

## <Models>

50inch (HD Panel)

## <NG Area>

(Front view)



## <Defective board>

- ① Trouble at Upper right : **C1 board or Panel defect**
- ② Trouble at Upper middle : **C2 board or Panel defect**
- ③ Trouble at Upper left : **C3 board or Panel defect**

# Picture Trouble all Over the Screen

## <Symptom>

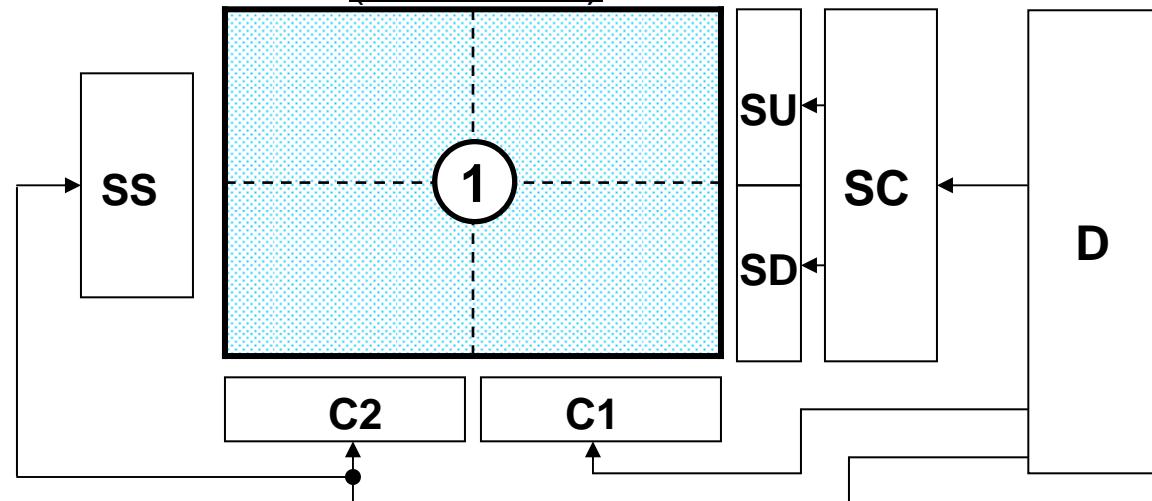
Picture noise, Full Vertical line, etc.

## <Models>

42inch (HD Panel)

## <NG Area (e.g. 42 inch Panel)>

(Front view)



## <Defective board>

① Trouble at All area : D or SC board  
(SU,SD) defect

## <Actual Symptom>

Symptom : Vertical line (All over screen)  
Result : D board



Symptom : White balance NG  
Result : D board



Symptom : Abnormal Picture  
Result : SC board



# Examples of Symptoms and Remedies

# Picture Problem (All over the screen)

**<Symptom>** Noise Picture

**<Photo of Symptom>**

**Model** : 42 inch **Result** : A Board



**Model** : 42 inch

**Result** : A Board



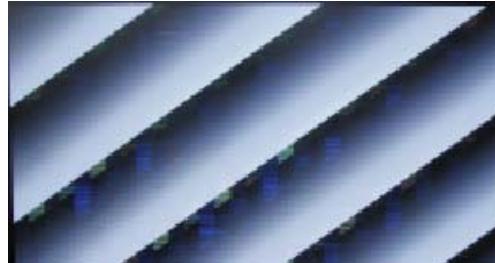
**Model** : 42 inch

**Result** : SC Board



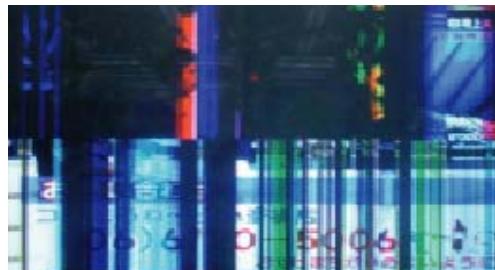
**Model** : 42 inch

**Result** : D Board



**Model** : 42 inch

**Result** : SC Board



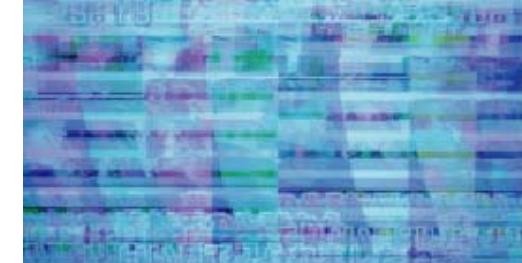
**Model** : 42 inch

**Result** : SC Board



**Model** : 42 inch

**Result** : D Board



**Model** : 42 inch

**Result** : SC Board



**Model** : 42 inch

**Result** : SC Board



# Picture Problem (All over the screen)

**<Symptom>** Vertical Line

**<Photo of Symptom>**

**Model** : 42 inch

**Result** : D Board



**Model** : 42 inch

**Result** : D Board



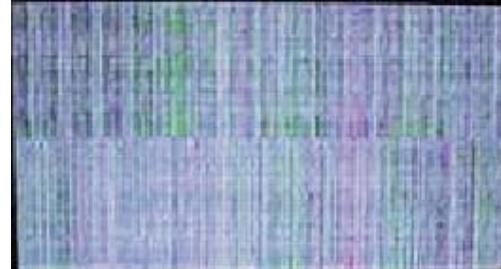
**Model** : 42 inch

**Result** : SC Board



**Model** : 42 inch

**Result** : D Board



**Model** : 42 inch

**Result** : D Board



**Model** : 42 inch

**Result** : SD Board



**Model** : 42 inch **Result** : D Board



**Model** : 42 inch

**Result** : D Board



**Model** : 42 inch

**Result** : SD Board



# Picture Problem (All over the screen)

<Symptom> Abnormal Color, White Balance NG

## <Photo of Symptom>

Model : 42 inch

Result : D Board



Model : 42 inch

Result : D Board



Model : 42 inch

Result : D Board



Model : 42 inch

Result : D Board



Model : 42 inch

Result : D Board



Model : 42 inch

Result : D Board



Model : 42 inch

Result : D Board



Model : 42 inch

Result : D Board



Model : 42 inch

Result : D Board



# Picture Problem (All over the screen)

**<Symptom>** Sync Error

**<Photo of Symptom>**

**Model** : 42 inch

**Result** : D Board



**Model** : 42 inch

**Result** : D Board



**Model** : 42 inch

**Result** : D Board



**Model** : 42 inch

**Result** : D Board



**Model** : 42 inch

**Result** : D Board



**Model** : 42 inch

**Result** : D Board



**Model** : 42 inch

**Result** : D Board



**Model** : 42 inch

**Result** : D Board



# Picture Problem (Right half or Left half)

**<Symptom>** Vertical Line

**<Photo of Symptom>**

**Model** : 50 inch

**Result** : D Board



**Model** : 42 inch

**Result** : D Board



**Model** : 42 inch

**Result** : D Board



**Model** : 42 inch

**Result** : D Board



**Model** : 42 inch

**Result** : D Board



**Model** : 42 inch

**Result** : D Board



**Model** : 42 inch

**Result** : D Board



**Model** : 42 inch

**Result** : D Board



# Picture Problem (Upper or Bottom)

<Symptom> Vertical Line

<Photo of Symptom>

Model : 42 inch

Result : D Board



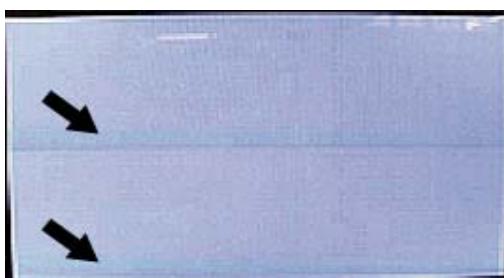
Model : 42 inch

Result : SU Board



Model : 42 inch

Result : SS Board



Model : 42 inch

Result : D Board



Model : 42 inch

Result : D Board



Model : 42 inch Result : D Board



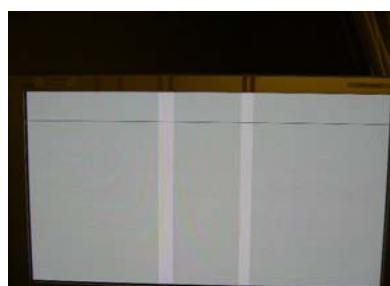
Model : 42 inch

Result : SC Board



Model : 42 inch

Result : SU Board



# Self-check Procedure

**CHASSIS: GPH11D**

All models

**NOTE: This procedure does not reset the TV**

## How to access the self-check screen to reset the unit.

Select a television channel, and while pressing the [VOLUME ( - )] button on the main unit, press the [OK] button on the remote control for more than 3 seconds.

## How to Exit the self-check screen

Press and hold the Power button on the TV for 5 seconds or disconnect the AC cord from the wall outlet.

## Self-check Screen



**TV volume down & OK on remote only does a basic IC self check. It does NOT Reset the TV.**

It does not clear channel programmed settings, picture settings, channel labels, LOCK mode settings, or password.

Using this method, it shows the unit firmware version (Peaks 1.050 and GenX 1.00) and it checks IC communications ONLY. This is more useful to identify the firmware version without having to decode the info in the setup menu About/Version screen.

# Reset Procedure

**CHASSIS: GPH11D**

**All models**

**To Reset the Unit**, turn the TV on and while pressing the “VOLUME ( - )” button on the main unit, press the “Menu” button on the remote control for more than 3 seconds. The Self-Check menu appears on screen. Then, disconnect the AC cord from the wall outlet.

**Note: All customer programmed parameters will be erased.**